

ESSAY II.

ON THE

NATURE and PRINCIPLES

OF

PUBLIC CREDIT.

CONTAINING

An Investigation of the Natural Laws and Principles of CIRCULATION, restorative of the PUBLIC CREDIT of any State, in case it shall have become decayed,

TOGETHER WITH

A POSTSCRIPT, pointing out the Method of applying those Laws and Principles, practically, to the Present State of the Public Debts and Finances of GREAT-BRITAIN.

L O N D O N :

Printed for B. WHITE, at Horace's Head, Fleet-Street.

M, DCC. LXXXIV.

U. S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

WATER RESOURCES DIVISION

REPORT OF THE

COMMISSIONER OF THE GENERAL LAND OFFICE

TO THE SECRETARY OF THE INTERIOR

FOR THE YEAR 1900

AND FOR THE YEAR 1901

AND FOR THE YEAR 1902

AND FOR THE YEAR 1903

AND FOR THE YEAR 1904

AND FOR THE YEAR 1905

AND FOR THE YEAR 1906

AND FOR THE YEAR 1907

AND FOR THE YEAR 1908

AND FOR THE YEAR 1909

AND FOR THE YEAR 1910

EAST-FLORIDA, }
in NORTH-AMERICA. }

*To all to whom these presents shall come,
or may in any wise concern, I JOHN
KERR, Public Notary, by Royal Au-
L. S. thority duly admitted and sworn, re-
siding in St. Augustine, in the province
aforesaid, DO make known and ma-
nifest,*

THAT on this 31st day of March, in
the year of our Lord one thousand
seven hundred and eighty-four, personally
came and appeared before me, the said No-
tary, SAMUEL GALE, formerly of the coun-
ty of Cumberland in the province of New-
York, Esquire, late Acting *Itinerant* Deputy
Paymaster General of his Majesty's Forces
in the Southern Colonies, and now residing
temporarily at St. Augustine, in the pro-
vince of East-Florida aforesaid, who did
then and there represent to me, the said
Notary, that he then had in the press,
nearly finished, a certain work, entitled,
“ Essay II. on the Nature and Principles of
“ Public Credit. Containing an Investiga-
“ tion of the Natural Laws and Principles
“ of Circulation, restorative of the Public
“ Credit of any State, in case it shall have
A 2 “ become

“ become decayed. Together with a Post-
 “ script, pointing out the Method of apply-
 “ ing those Laws and Principles, practically,
 “ to the present State of the Public Debts
 “ and Finances of Great-Britain ;” of which,
 he was getting struck off a number of co-
 pies, from one hundred at the least, to one
 hundred and twenty, at the most. And
 because his having recourse to the press in
 the said province, might perhaps be confi-
 dered as a dereliction of his legal right in
 such his labour, unless the contrary should
 appear ; he the said Samuel Gale, being then
 and there duly sworn on the Holy Evange-
 lists of Almighty God, did declare, depose,
 and say, “ that it was not his intention that
 “ the copies so to be here struck off, should
 “ be considered in the light of an edition
 “ or publication ; for, that none of the
 “ said copies should at any time be sold by
 “ his authority, direction, or consent ; but
 “ on the contrary, that his reasons for hav-
 “ ing this recourse to the press, were the
 “ following, and no other, to wit ; that
 “ for some weeks after he had finished the
 “ manuscript, he intended to have delayed
 “ the printing thereof, until he should be
 “ in London, and to have laid the said
 “ manuscript before his Majesty’s Servants,
 “ and others, the studious in that branch
 “ of science, previous to the publication
 “ thereof ; but, finding it inconvenient to
 “ 89

“ go to London, so soon as he intended at
 “ that time, and being desirous of trans-
 “ mitting a greater number of copies for
 “ the consideration of his Majesty’s Ser-
 “ vants, and others, the studious in that
 “ brance of science, than could be conve-
 “ niently prepared in manuscript, he there-
 “ fore had this recourse to the press, for
 “ assistance, and not for a general publica-
 “ tion.”

Wherefore, at the request of the said Samuel Gale, I the said Notary, do hereby make known the premises, to the intent that the copies so to be here struck off (to each and every of which a printed copy of this notification will be affixed) be not considered, deemed, or taken in the light of an edition or publication; but, be taken and considered as if the same were in manuscript, the private property of him the said Samuel Gale, not to be published by any person or persons whomsoever, without directions for so doing, from him, or his legal representative.

*In Testimony whereof, I the said Notary,
 have hereunto set my Hand, and affixed
 my Seal of Office; and the said Samuel
 Gale hath hereunto subscribed his name,
 the day and year in these presents before
 written.*

S. GALE.

JOHN KERR, *Pub. Not.*

P R E F A C E.

IN my former Essay on the subject of Public Credit, I endeavoured to investigate the natural principles thereof, so far forth, as to ascertain the system of practice, by which a public debt would be preserved from those maladies, to which it must naturally be subjected, by different systems of practice: as also, the different degrees of malady, to which, different systems of practice must naturally subject it.

In the following sheets, I endeavour to investigate and ascertain the system of practice, whereby those maladies will naturally be removed, in case they shall have actually taken place; and whereby the Public Credit will naturally become restored to its pristine state, in case it shall so have fallen into a decay.

This second Essay being, as it were, a continuation of the first, I shall take it for granted,

granted, that the reader has so far a knowledge of the former, as to be able to recollect the several principles therein contained, that shall appertain to the present part of the subject, on their being briefly mentioned, as occasion shall require.

The same indulgence, with respect to style and language, that I requested in my former Essay, I must request again : and if, in the perusal of the former, the reader shall have found a degree of satisfaction adequate to the labour, with which such perusal was attended ; I would willingly flatter myself with hopes, that, by a like labour in the perusal, the following sheets may afford an equal, perhaps a greater, degree of satisfaction.

S. GALE.

St. Augustine, East-Florida,
December, 1783.

POSTU-

P O S T U L A T U M.

HAVING in my former Essay, used the terms *appreciation* and *depreciation*, to signify, technically, the opposites of each other, as rising and falling, without previously postulating for so doing; it is necessary that I should now postulate, that the terms *appreciation* and *depreciation*, be so taken, until other terms, more proper, shall occur.

This Postulatum should have been made at the beginning of the sixth section of the former Essay.

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POSTULATUM

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ESSAY

ESSAY II.

SECTION I.

Of the Nature and Progressional Power of the Sinking Fund, that shall be appropriated to the redemption of the Public Debt, whereby alone any maladies, under which the Public Credit shall labour, can be removed; which Progressional Power always increases naturally, as the Public Credit declines; but as naturally decreases again, on the revival of the Public Credit; and thereby becomes ineffectual, with respect to removing the malady, unless the Progressional Power so acquired be secured: The security whereof naturally renders the annuity appertaining to the creditor liable to reduction, unless that also be equally secured.

IF the effects naturally flowing from the practical adoption of every particular measure were previously contemplated; it would, generally speaking, be a much easier task to prevent evils from taking place, than to remove them afterwards. But, as we often see remedies effected, even when a ray of hope has scarce remained,

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mained, we ought never to despair of being able, by diligent labour and application, to ascertain the fountain of the malady, and to heal the sores that may have flowed from it.

The reader will recollect from my former Essay (of which this may be considered as a continuation) that the maladies of public credit naturally proceed from the want of appropriating a sufficient proportion of money, periodically, to the public debt; in consequence whereof, the value of the capital or stock naturally depreciates; with which depreciation the rate of interest naturally rises, and a greater periodical revenue, or burthen on the members of the state, thereby becomes necessary, in order to put any given capital in motion.

Now, seeing that the insufficiency of the proportion of money appropriated to the debt, is the cause, from whence the malady flows, it must necessarily follow, that an addition to the money so appropriated, must be the only natural remedy or counteractor of that malady. This, the reader will recollect, coincides with what was mentioned in the conclusion of the ninth section of my former Essay, viz. "that the only remedy in nature for the maladies of public credit, is a sinking fund, or, in other words, a revenue wherewith to redeem the debt."

It is also perfectly evident, that the rate of interest is the ratio of the progression, in which the redemption of the capital or principal, and the release of the revenue appropriated to the payment of the interest thereof, will be effected, by the appropriation of any surplus revenue or sinking fund; wherefore, the higher the rate of interest shall be, the greater will be the redemption that

will be effected by any given surplus revenue or sinking fund, in the same given time.

For example. The capital or principal that will be paid off, and the annual revenue that will be released, by the appropriation of a surplus revenue or sinking fund of one million per annum (or rather 500,000*l.* per half year, supposing the payments to be made half-yearly) during twenty years, will be as follows, according as the rate of interest shall be; viz.

If the rate of interest be 3 per cent. per annum;

£. 27,133,660 cap. and £. 814,010 rev.

If 4 per cent. per annum;

£. 30,201,250 cap. and £. 1,208,050 rev.

If 5 per cent. per annum;

£. 33,701,400 cap. and £. 1,685,070 rev.

If 6 per cent. per annum;

£. 37,700,500 cap. and £. 2,262,030 rev.

The same surplus revenue; or sinking fund; will, in thirty years, redeem as follows; viz.

If the rate of interest be 3 per cent. per annum;

£. 48,106,660 cap. and £. 1,443,200 rev.

If 4 per cent. per annum;

£. 57,026,000 cap. and £. 2,281,040 rev.

If 5 per cent. per annum;

£. 67,996,200 cap. and £. 3,399,810 rev.

If 6 per cent. per annum;

£. 81,526,400 cap. and £. 4,891,584 rev.

The redemptions that will be effected by the same surplus revenue, or sinking fund, of one million per annum (or rather 500,000*l.* per half year) in forty years, will be as follows; viz.

If the rate of interest be 3 per cent. per annum;

£. 76,102,400 cap. and £. 2,283,072 rev.

If 4 per cent. per annum,
 £.96,886,500 cap. and £.3,875,460 rev.

If 5 per cent. per annum,
 £.124,182,000 cap. and £.6,209,100 rev.

If 6 per cent. per annum,
 £.160,680,730 cap. and £.9,640,844 rev.

The same surplus revenue, or sinking fund, will, in fifty years, redeem as follows; viz.

If the rate of interest be 3 per cent. per annum,
 £.114,400,000 cap. and £.3,432,000 rev.

If 4 per cent. per annum,
 £.156,117,500 cap. and £.6,244,700 rev.

If 5 per cent. per annum,
 £.216,276,000 cap. and £.10,813,800 rev.

If 6 per cent. per annum,
 £.303,642,000 cap. and £.18,218,520 rev.

And so in proportion for any other surplus revenue, or sinking fund, whether greater or lesser.

Here then it must be observed, that as the rate of interest naturally increases, in consequence of an insufficiency in the proportion of money periodically appropriated to the debt, and thereby causes the burthens of the members of the state, for putting any given capital in motion, to become greater and greater; so also, from that increase in the rate of interest, there naturally flows a proportionate addition to the power or efficacy of the surplus revenue, or sinking fund, that shall be appropriated to the removal of those burthens; so that out of the malady itself there naturally springs a remedy proportionate to it, in case the sinking fund shall be so administered, as to preserve the additional power or efficacy so produced.

But it must be remembered, that the appropriation of a surplus revenue, or sinking fund, to the

the redemption of the debt, naturally produces a decrease in the rate of interest: and seeing, that the lower the rate of interest shall be, the less will be the power or efficacy of the sinking fund; it must necessarily follow, that the above-mentioned additional power or efficacy, which the sinking fund naturally derives from the increase of the rate of interest, will naturally become lost, as the rate of interest decreases, unless its security be previously provided for.

It must also be observed, that the decrease in the rate of interest is one of the principal objects, in which the removal of the malady consists; because, the lower the rate of interest shall be, the less will be the revenue (or burthen to the members of the state) that will be required to put any given capital in motion, for the public service or defence, or for the improvement of commerce and industry. A decrease in the rate of interest, is therefore a natural (and perhaps the only possible) incentive to a general improvement of commerce, industry, and the useful arts*; and is therefore

* Regulations of commerce by positive laws, viz. prohibitions, monopolies, bounties, drawbacks, exemptions, &c. may indeed encourage particular branches of industry at the expence of other branches, by drawing the capitals so employed, out of one branch into another: but, if we admit (which I think we may admit with the greatest safety) that commerce and industry can be supported no otherwise than by the capitals so employed; it must necessarily follow, that nothing but a decrease in the rate of interest (whereby larger capitals shall become obtainable at a smaller expence or interest) can afford a general encouragement to commerce and industry.

therefore one of the greatest blessings that a nation is capable of enjoying. And, seeing that the sinking fund, to be applied to the redemption of the public debt, is the instrument wherewith to produce this necessary decrease in the rate of interest; the greater its effective power shall be, the faster the rate of interest will be thereby decreased; the sooner also the malady of the public credit will be thereby removed; and the more the commerce

On this admission also, the encouragements that shall be given to particular branches of commerce and industry, in preference to other branches, must be exceedingly dangerous; not only because they have a natural tendency to distress other branches, by a diversion of the capitals that should naturally be employed in them; but also, because they have a natural tendency to cause the productions of the labour, so maintained by the diverted capitals, to exceed their natural proportions; whereby those productions may become unable to find a market; and in that case, the branch so favoured must necessarily suffer, as well as the others; and the whole must consequently fall into a greater degree of decay, than could possibly flow from the same cause, whatever it might be, if every thing was left to the free competition of the market.

If any particular branch of commerce, or industry, be in itself more profitable than the other branches, any additional preference must certainly be unnecessary; and so far as it shall be less profitable than the other branches, it must certainly be unworthy of a preference. The incentive to the improvement of commerce and industry, ought therefore to be general and free, not partial or confined; and ought to be directed towards a decrease in the rate of interest, by the free and open competition of the market; because thereby, and thereby alone, larger capitals can be put in motion, with the same given resources; whereby alone, that general incentive can be produced.

commerce and industry of the state will be promoted.

From these observations it is perfectly evident, that the first step to be taken, in order to remove the malady under which the public credit shall labour, must be, to secure the power or efficacy of the sinking fund from decreasing as the market-rate of interest shall decrease.

Now, a decrease in the rate of interest, and an increase in the value of annuities (of which it must be remembered the public debt is composed) naturally go hand in hand with each other; wherefore, in order to preserve the power of the sinking fund from *decreasing* as the rate of interest decreases, the price to be demanded for the redemption of the annuities, must be prevented from *increasing* as the rate of interest decreases.

The reader will recollect, from the second section of my former Essay, that in a public debt, the annuity only, and not the capital or principal, is demandable by the creditor. This being the case, the annuity is in reality the actual debt; and hence, whatever the nominal capital or stock shall be, or whether the debt shall or shall not have any nominal capital or stock, the actual capital or real principal of such debt, must be the actual value of the annuity.

It must also be remembered, that if the annuity, or actual debt, shall have no nominal capital (which is the case with perpetual annuities, and with determinate annuities, as defined in the beginning of the second section of my former Essay) the price to be demanded by the annuitant, for the redemption thereof, is not restricted; and is therefore capable of increasing, from time to time, in its natural proportion, to whatever degree the

market-rate of interest shall decrease. But the price to be demanded for the redemption of an annuity stock, is naturally restricted, so far forth (and so far forth only) that it cannot increase beyond the nominal capital thereof.

Hence then, in order to prevent the price that shall be demanded for the redemption, from increasing as the rate of interest shall decrease, (whereby alone the power of the surplus revenue, or sinking fund, so to be appropriated, can be preserved) the debt must be converted into a redeemable stock, the nominal capital whereof shall not exceed the actual value of the annuities, computed according to the market-rate of interest for the time being.

To make these observations plain by an example, let it be supposed that a public debt shall consist of one hundred millions of 3 per cent. stock, or, which is the same, of three millions of annuity to be redeemed; and let it also be supposed, that the market-rate of interest for the time being should be $4\frac{1}{2}$ per cent. per annum. In this case, the actual value or real principal of the debt, for the time being, would be $66\frac{2}{3}$ millions; that is $66\frac{2}{3}$ £. in money for every 3 £. annuity, or for every 100 £. of 3 per cent. stock. But if the rate of interest in the market decreases (and decrease it unavoidably must, by the appropriation of a surplussage of money to this channel of circulation) to 4 per cent. per annum, the redemption of 100 £. of 3 per cent. stock, or of 3 £. annuity thereunto annexed, must require 75 £. Should the rate of interest in the market decrease to $3\frac{1}{2}$ per cent. per annum, the redemption of 100 £. of 3 per cent. stock, or of 3 £. annuity thereunto annexed, must require $85\frac{1}{3}$ £. Should the rate of interest in the market decrease

decrease to 3 per cent. per annum, the redemption of 100*l.* of 3 per cent. stock, or of 3*l.* annuity thereunto annexed, must require 100*l.* instead of the aforesaid 66 $\frac{2}{3}$ *l.* And seeing that this increase in the price will naturally be greater or lesser, according as a greater or lesser surplussage of money shall be thrown into this channel of circulation; so, consequently, the greater the sinking fund, thus appropriated, shall be, the greater must be the loss to the public in the redemption. In order, therefore, to prevent the price of the redemption from thus increasing, as the market-rate of interest shall decrease, the debt must be converted into a redeemable annuity-stock, the nominal capital whereof shall not exceed the said 66 $\frac{2}{3}$ millions; without which, the power of the sinking fund must naturally be swallowed up, by the increasing price, which naturally becomes required for the redemption.

In the like manner, whatever annuities the debt to be redeemed shall be composed of (whether perpetual, redeemable, determinate, or mixed annuities) the actual value thereof, for the time being, must be converted into a redeemable stock, the nominal capital of which shall not exceed such actual value; or else, the power of the sinking fund, that shall be appropriated to the redemption, must mathematically and infallibly fail.

But it must be observed, that although when the rate of interest shall stand at 4 $\frac{1}{2}$ per cent. an annuity stock bearing 4 $\frac{1}{2}$ per cent. is worth 100*l.* and an annuity stock bearing 3 per cent. is worth only 66 $\frac{2}{3}$ *l.* yet, no man, consistent with his own interest (which may with perfect safety be assumed to be his *primum mobile* in all cases) can give up 100*l.* of 3 per cent. stock for 66 $\frac{2}{3}$ *l.* of 4 $\frac{1}{2}$ per cent.
stock;

stock; because the natural principles of commercial speculation will be against him, in the following manner; viz.

If the market-rate of interest should stand at $4\frac{1}{2}$ per cent. or, if it should become higher than $4\frac{1}{2}$ per cent. in either of these cases, 100*l.* of 3 per cent. stock will be worth as much as $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock; and if the market rate of interest should become lower than $4\frac{1}{2}$ per cent. 100*l.* of 3 per cent. stock will be worth more than $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock: so that $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock cannot possibly become worth more than 100*l.* of 3 per cent. stock; but 100*l.* of 3 per cent. stock may become worth much more than $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock*.

Hence then, the nominal capital of the stock necessary to be given for every 100*l.* of 3 per cent. stock, or for every $66\frac{2}{3}$ *l.* of the actual value of the debt, must be such as shall (contingently at least) be worth more than $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock; and, seeing that the said nominal capital so to be given, must not exceed $66\frac{2}{3}$ *l.* the rate of interest, or annuity thereunto to be annexed, must necessarily exceed $4\frac{1}{2}$ per cent.

But here again it must be observed, that as the rate of interest to be annexed to the annuity stock, must in this case be higher than the rate of interest in

* For these reasons, it may likewise be observed, that when a man can buy a 3 per cent. stock at any given price, he cannot, consistent with his own interest, give the full comparative value for any stock bearing a higher rate than 3 per cent. unless the conditions of redemption shall be so stipulated as to afford an equal advantage to each stock, taking all fluctuations of the market-rate of interest into consideration together.

in the market; the extra interest, so to be annexed to the stock, naturally becomes liable to an immediate reduction, unless its security be provided for: because it immediately becomes the interest of the annuitor, to borrow other money at the market-rate of interest, wherewith to redeem the stock, which is evidently contrary to the interest and intention of the annuitant or creditor, to whom such extra interest becomes of right due, in return for the equivalent (i. e. the capacity of the increase in value) by him given up.

In order, therefore, to regard uprightly the mutual interests of the parties, it is equally necessary, that the honest demand of the annuitant or creditor should be secured from decreasing, as that the progressional power of the sinking fund, to be appropriated by the annuitor or public, should be secured from decreasing; and, in order that this equal security shall flow naturally from the stock, into which the debt shall be thus converted, the stock must necessarily be established on certain fixed principles, or limited conditions of redemption.

The necessary principles of the stock thus to be established, require a particular consideration.

S E C T.

S E C T. II.

An Investigation, ascertaining the necessary principles of an Annuity Stock, that shall naturally produce an equal security to the Progressional Power of the Sinking Fund, and to the Annuity appertaining to the creditor.

IN order to ascertain the necessary principles of a stock, that shall naturally produce an equal security to the progressional power of the sinking fund, that shall be appropriated by the annuitor or public, and to the interest or annuity that shall appertain to the annuitant or creditor; it is necessary to bring into one view, the advantages intended to be derived, and the disadvantages intended to be avoided, by each of the contracting parties; and to examine how far their respective interests coincide with each other, and at what point they begin to separate. I must therefore request the reader to pardon the repetitions, which such examination renders necessary.

The supposition on which this second Essay commences, is, that the credit of the annuitor or public is in a declined state; which is evinced by a depreciation of the capital-value of the annuities, and an increase in the rate of interest; which are, in their nature, inseparable companions, and go always hand in hand with each other. The final effect, from hence naturally flowing, is a public bankruptcy (as was demonstrated in the ninth section of my former Essay) by which the credit of the annuitor, and the debt due to the annuitant,

annuitant, must be naturally swallowed up in one and the same grave.

To avoid this direful calamity, is equally the interest, and must therefore be supposed to be equally the intention, of both parties: and seeing (as was observed in the beginning of the foregoing section) that the only possible remedy or preventative of this direful calamity, is the appropriation of a surplus revenue, or sinking fund, for the redemption of the debt; so, consequently, the respective interests of the parties must necessarily form, thus far, a perfect coincidence and conjunction. It must likewise necessarily follow, that this coincidence and conjunction of the interests of the parties would remain uninterrupted, if the sinking fund, so to be appropriated, was productive of no other effect but the redemption thus required.

The only disjunction, therefore, that can take place in the interests of the parties, appertains to the further effects (which go hand in hand with the decrease of the rate of interest) naturally flowing from the appropriation of the sinking fund. These effects are (as was observed in the foregoing section) either an increase in the capital-value of the annuity, or a decrease in the annuity itself; the one or the other of which must, in the natural and unalterable course of things, be unavoidably produced.

So far as the capital-value of the annuity shall increase in consequence of the decrease of the rate of interest, an advantage must evidently flow to the annuitant or creditor. But unless the price to be demanded for the redemption be limited, in the manner mentioned in the foregoing section, this increase in the capital-value of the annuity, destroys

destroys the progressional power of the sinking fund, that shall be so appropriated by the annuitor or public.

On the other hand, so far as the annuity shall decrease in consequence of the decrease of the rate of interest, so far an advantage must evidently flow to the annuitor or public.

But here it must be observed, that the annuitant has always a demand on the annuitor for his full annuity (whatever may be the difference between the market-rate of interest and the rate annexed to the stock) until the money for the stock or capital shall be tendered in discharge thereof: so that the annuity or interest appertaining to the creditor, can never decrease in consequence of the decrease of the market-rate of interest, in any further degree than as the principal shall be thus tendered.

Hence then, if the price to be demanded for the redemption be limited, by converting the debt into a stock of annuities, bearing a higher rate of interest than that of the market, in the manner mentioned in the foregoing section; and the tender to be periodically made for the redemption of such stock, be likewise limited to a certain proportion, beyond which it shall be at the option of the annuitant either to refuse the tender, or to accept it on such terms only, as he himself shall, from time to time, think proper: then, the progressional power of the sinking fund, that shall be appropriated to the redemption of such stock, as also the annuity or interest appertaining to the remaining part of such stock, will each be perfectly secured from decreasing with the market-rate of interest. And so far as the annuity, or interest on the stock, shall be thus secured from
decreasing,

decreasing, so far the capital-value thereof must consequently increase, as the rate of interest in the market shall decrease.

The grand point, therefore, remaining to be determined, is the proportion, which the tender, thus to be stipulated, shall bear to the capital or stock.

Now, the larger the tender, thus to be stipulated, shall be, the more advantageous it must evidently be for the annuitor; because, how much so ever the surplus revenue, or sinking fund, shall fall short of the stipulated tender, the annuitor may nevertheless save the decrease of the interest thereon, by borrowing the money in the market.

But, although the advantage or profit, flowing to the annuitor or public, will be greater as the stipulated tender shall be greater, yet it does not hold, *vice versa*, that the advantage or profit, flowing to the annuitant or creditor, shall be greater, as the stipulated tender shall be lesser; because, the less the tender shall be, the less must be the decrease thereby produced in the market-rate of interest; and the less, of course, must be the increase in the capital-value of the annuity stock, in which increase the annuitant's advantage or profit consists.

The greater the tender shall be, the greater must be the decrease thereby produced in the market-rate of interest; and the greater, of course, must be the advantage or profit, to one or other of the parties: and, seeing that such part of this profit as cannot, by the stipulation, be saved by the annuitor, must necessarily accrue to the annuitant in the increase of the value of his stock or capital; so, consequently, it must be the interest of the annuitant to subject himself to as great a tender as
shall

shall be capable of producing as great a profit to himself, as it shall produce to the annuitor; whereby, whatever decrease shall be so actually produced in the market-rate of interest, the annuitor shall naturally save the one-half thereof by the tenders so by him to be made; and whereby also, the capital-value of the annuity stock appertaining to the annuitant, shall naturally increase, in proportion to the other half thereof.

Now, this required division will be precisely and exactly accomplished, by stipulating, that the tender, to which the annuitant shall be periodically subject, in discharge of the stock or capital, shall be equal to the annuity or interest that shall be by him periodically demandable. For, if any annuity stock, bearing any rate of interest higher than that of the market, be subject to a periodical tender, in discharge of the capital, equal to the annuity, or interest therefrom periodically flowing, the value thereof will be precisely the same as if such annuity was perpetual, and the rate of interest half-way between that of the market and that of the stock*.

For

* DEMONSTRATION.

I. If any annuity, $a = C \times r - 1$, shall flow from any perpetual annuity stock or capital C , bearing a rate r , equal to the ordinary rate of increase by interest in the market; then it is evident that the value or present worth of such annuity a , or of such stock C , will

be - - - - - $C = \frac{a}{r-1}$

II. But the value or present worth of such annuity stock, and the present worth of all the periodical annuities,

For example: If the rate of interest in the market be $4\frac{1}{2}$ per cent. per annum, an annuity stock bearing 5 per cent. per annum, subject to a tender of 5 per cent. per annum, in discharge of the capital, will be worth just $105\frac{5}{19}$ $\text{\textit{l}}$. which is exactly the same as a perpetual annuity of 5 $\text{\textit{l}}$. would be worth, if the market-rate of interest was $4\frac{3}{4}$ per cent. per annum.

An annuity stock bearing 5 per cent. per annum, subject to a tender of 5 per cent. per annum, in discharge of the capital, will, when the rate of interest in the market is 4 per cent. per annum, be worth just $111\frac{1}{3}$ $\text{\textit{l}}$. which is exactly the same as a perpetual annuity of 5 $\text{\textit{l}}$. would be worth, if the market-rate of interest was $4\frac{1}{2}$ per cent. per annum.

When

ties, so flowing therefrom, *ad infinitum*, are precisely one and the same thing; wherefore we have

$$\frac{a}{r} + \frac{a}{r^2} + \frac{a}{r^3} + \frac{a}{r^4} + \frac{a}{r^5} + \text{\textit{Ec. ad infinitum}}, = \frac{a}{r-1}$$

III. Again, if any annuity $A = C \times \overline{R-1}$, shall flow from any redeemable annuity stock or capital C , equal in nominal capital to the former, but bearing a rate of increase by production R , higher than the ordinary rate r , of increase by interest in the market; then it is evident, that the value or present worth of such annuity A , or of such stock C , must be greater than the former, according to the terms or conditions, on which the said stock or capital shall be redeemable; whereby the extra part $A - a$ of the annuity (or the extra interest $C \times \overline{R-r}$) shall, so far forth, expire.

IV. And, if such stock or capital C , bearing the said rate R , be subject to any given periodical ratio R of redemption, by *par* payment; then it is evident, that the said extra part $A - a$ of the annuity, must periodically

C
decrease

When the rate of interest in the market is $3\frac{1}{2}$ per cent. per annum, an annuity stock bearing 5 per cent. per annum, subject to a tender of 5 per cent. per annum, in discharge of the capital, will be worth just $117\frac{1}{4}\%$, which is exactly the same as a perpetual annuity of 5% would be worth, if the market-rate of interest was $4\frac{1}{4}$ per cent. per annum.

If the rate of interest in the market should be 3 per cent. per annum, the value of a five per cent.

decrease in that given ratio, and must therefore become periodically as follows, viz.

$$\frac{A-a}{1}, \frac{A-a}{R}, \frac{A-a}{R^2}, \frac{A-a}{R^3}, \frac{A-a}{R^4}, \text{ \&c. ad infinitum ;}$$

the value or present worth of which is

$$\frac{A-a}{r} + \frac{A-a}{r^2 R} + \frac{A-a}{r^3 R^2} + \frac{A-a}{r^4 R^3} + \frac{A-a}{r^5 R^4} + \text{ \&c. ad}$$

$$\text{infinitum ; which (per II.) is equal to } - \frac{\overline{A-a} \times R}{r R - 1}$$

V. Wherefore (I. & IV.) the value or present worth of the said annuity A , or stock C , bearing the rate

$$R, \text{ is } - - - - - \frac{a}{r-1} + \frac{\overline{A-a} \times R}{r R - 1}$$

VI. Now, if the periodical tender, to which the said stock or capital C , bearing the said rate R , be subjected, shall be equal to the annuity A , therefrom flowing ;

$$\text{then it is evident, that } - - - - - \frac{C}{R} = C - A$$

$$\text{VII. Which (III.) is } - - - \frac{C}{R} = C - \frac{C \times R}{R-1} = 2C - CR.$$

$$\text{VIII. Wherefore, } - - - R = \frac{C}{2C - CR} = \frac{1}{2 - R}$$

IX. In this case, therefore, the above-mentioned value

tent. annuity stock, subject to the above-mentioned principle of redemption, would be 125%. which is exactly the same as a perpetual annuity of 5*l.* would be worth, if the market-rate of interest was 4 per cent. per annum.

In like manner, the value of an annuity stock, bearing 6 per cent. per annum, subject to a tender of 6 per cent. per annum, in discharge of the capital, will be as follows; viz.

If the rate of interest in the market be 5 per cent. per annum, such 6 per cent. stock will be worth

value or present worth (V.) of the annuity *A*, or of the stock *C*, bearing the rate *R*, will be

$$\frac{a}{r-1} + \frac{\frac{A-a}{2} \times \frac{1}{2-R}}{\frac{r}{2-R}-1}$$

X. Which (by reduction) is $= \frac{a}{r-1} + \frac{A-a}{r+R-2}$

XI. But (I.) $a = C \times \overline{r-1}$, wherefore the above value or present worth (X.) is $= C + \frac{A-C \times \overline{r-1}}{r+R-2}$

XII. Which (by reduction) is $= \frac{CR-C+A}{r+R-2}$

XIII. Again (III.) $A = C \times \overline{R-1} = CR-C$; wherefore the above value or present worth (XII.)

is $= \frac{2A}{r+R-2}$

XIV. Which (by reduction) is $= \frac{A}{\frac{r+R}{2}-1}$

WHICH WAS TO BE DEMONSTRATED.

worth $109\frac{1}{11}\%$. which is exactly the same as a perpetual annuity of 6%. would be worth, if the market-rate of interest was $5\frac{1}{2}\%$ per annum.

If the rate of interest in the market be 4 per cent. per annum, such 6 per cent. stock will be worth 120%. the same as a perpetual annuity of 6%. would be worth, if the market-rate of interest was 5 per cent. per annum.

If the rate of interest in the market should be 3 per cent. per annum, such 6 per cent. stock would be worth $133\frac{1}{3}\%$. the same as a perpetual annuity of 6%. would be worth, if the market-rate of interest was $4\frac{1}{2}\%$ per cent. per annum. And the like universally, how much so ever or how little so ever the rate of interest in the market shall be lower than the rate annexed to the stock.

S E C T. III.

Of the superior advantages attendant on an Annuity Stock of the foregoing principles, in preference to any other kind of Annuities; and the mutual benefit flowing therefrom, as well to the Creditors as to the Public: whereby the Public Credit naturally becomes restored to its pristine state.

THE effects naturally flowing from a redeemable annuity stock, bearing a higher rate of interest than that of the market, and subject to the before-mentioned limited tender for the redemption, are so infinitely superior to the effects flowing from a debt consisting of any other kind of annuities, that it would be almost endless to un-

dertake a full enumeration of them: it is necessary, however, to take notice of a few of the most material.

It is perfectly evident, on the slightest reflection, that when a public debt shall have become more than sufficiently large for the employment and circulation of such surplus monies as would otherwise lay from time to time idle and unproductive, a sinking fund must be applied to the redemption of it (whatever annuities it shall consist of) or else, the capital-value thereof must unavoidably depreciate in the market.

And (seeing the application of such sinking fund must naturally and unavoidably produce a decrease in the market-rate of interest) if the annuities, of which the debt shall be composed, are not limited with respect to the price of the redemption (which is the case with perpetual annuities, and with determinate annuities, as also with annuities appertinent to stocks, so far forth as such annuity stocks shall bear a lower interest than that of the market) the power of the sinking fund must naturally and unavoidably decrease with the rate of interest; as has been already explained. On the other hand, if the price of the redemption be limited (which is the case with annuity stocks, bearing either the market-rate of interest, or any higher rate) and the tender to be made for the redemption of the capital, be not limited likewise; the annuity appertaining to the creditor, must decrease with the rate of interest, as has also been already explained. In every one of these cases, therefore, although the application of a sinking fund is indispensably and equally necessary, for the preservation of the interests of each of the parties; yet the actual application

thereof naturally and unavoidably produces an immediate disjunction, contrariety, and opposition, in their respective interests.

But in a stock bearing a higher interest than that of the market, and subject to a limited tender periodically, in discharge of the capital, equal to the annuity therefrom periodically flowing, the interests of the parties are each equally secured; and the advantages that flow from the decrease of the rate of interest (with which the application of the sinking fund is necessarily attended) become naturally divided, in equal proportions, between the annuitor and the annuitant; whereby their respective interests go naturally hand in hand with each other, and form, continually, a perfect and exact concordance, coincidence, and conjunction.

Were no other reasons to be urged, the above alone would perfectly evince, that such stock must be infinitely superior to any other possible kind of annuities, for a public debt.

But, although the above-mentioned stock is universally preferable to any other kind of annuities, it is still more peculiarly so as a security against the losses attendant on a decline of the public credit, or an increase in the rate of interest; because, in like manner as the capital-value of the annuity flowing from this stock increases, in proportion only to one-half of the decrease in the rate of interest; so also, in case of an increase in the ordinary rate of interest, the depreciation of the capital-value will be in proportion only to one-half of such increase.

This position, it must be observed, holds so long, and so long only, as the rate of interest appertinent to the stock, shall be higher than the rate of interest in the market; and, consequently,

the more the rate of interest on the stock shall exceed the rate of interest in the market, the greater this security must be.

For example : Let it be supposed, that the rate of interest in the market should be $4\frac{1}{2}$ per cent. per annum. In this case (supposing the market-rate of interest to be stationary) 100*l.* of annuity stock, bearing 3 per cent. per annum, would be worth $66\frac{2}{3}$ *l.* in money ; which would be of equal value with either of the following quantities of stock, bearing different rates of interest, and subject to the before-mentioned periodical tender of redemption ; viz.

£.				
$66\frac{2}{3}$	of annuity stock,	bearing	$4\frac{1}{2}$ per cent.	per ann.
$63\frac{1}{3}$	-	-	-	5 per cent. per ann.
$60\frac{2}{3}$	-	-	-	$5\frac{1}{2}$ per cent. per ann.
$58\frac{1}{3}$	-	-	-	6 per cent. per ann.

But, if the market-rate of interest should increase to 5 per cent. per annum, the 100*l.* of 3 per cent. stock, and the $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock, would each be worth only 60*l.* whereas the $63\frac{1}{3}$ *l.* of 5 per cent. stock, would be then worth $63\frac{1}{3}$ *l.* ; the $60\frac{2}{3}$ *l.* of $5\frac{1}{2}$ per cent. stock, $63\frac{1}{3}$ *l.* ; and the $58\frac{1}{3}$ *l.* of 6 per cent. stock, $63\frac{1}{3}$ *l.*

If the market-rate of interest should increase to $5\frac{1}{2}$ per cent. per annum, the 100*l.* of 3 per cent. stock, and the $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock, would each of them be worth only $54\frac{6}{11}$ *l.* ; whereas the $63\frac{1}{3}$ *l.* of 5 per cent. stock, would be then worth $57\frac{9}{11}$ *l.* ; the $60\frac{2}{3}$ *l.* of $5\frac{1}{2}$ per cent. stock, $60\frac{2}{3}$ *l.* ; and the $58\frac{1}{3}$ *l.* of 6 per cent. stock, $60\frac{2}{3}$ *l.*

If the market-rate of interest should increase to 6 per cent. per annum, the 100*l.* of 3 per cent. stock, and the $66\frac{2}{3}$ *l.* of $4\frac{1}{2}$ per cent. stock, would

each of them be worth only 50*l.*; whereas the 63 $\frac{1}{3}$ *l.* of 5 per cent. stock, would be then worth 52 $\frac{2}{3}$ *l.*; the 60 $\frac{2}{3}$ *l.* of 5 $\frac{1}{2}$ per cent. stock, 55 $\frac{1}{3}$ *l.*; and the 58 $\frac{1}{3}$ *l.* of 6 per cent. stock, 58 $\frac{1}{3}$ *l.*

This superior security of the value of the stock bearing the higher rate of interest, flows (it must be observed) from the additional annuity that is demandable by the annuitant, in proportion to the value of his capital.

For example: Although each of the above-mentioned different quantities of annuity stock, are worth 66 $\frac{2}{3}$ *l.* in money, when the rate of interest in the market is 4 $\frac{1}{2}$ per cent. per annum; yet the annuities demandable on each by the annuitant, are different, as follows; viz.

The annual demand of the annuitant

or creditor, on the 100*l.* of 3 per

cent. stock, or on the 66 $\frac{2}{3}$ *l.* of £. s. d.

4 $\frac{1}{2}$ per cent. stock, is - - - 3 : 0 : 0

On the 63 $\frac{1}{3}$ *l.* of 5 per cent. stock, 3 : 3 : 4

On the 60 $\frac{2}{3}$ *l.* of 5 $\frac{1}{2}$ per cent. stock, 3 : 6 : 8

On the 58 $\frac{1}{3}$ *l.* of 6 per cent. stock, 3 : 10 : 0

And the greater the demand, thus vested in the annuitant or creditor, shall be, the greater, of course, must be the security of his capital.

The attentive reader will observe, that although in a public debt, the annuitant or creditor cannot, consistent with the safety and well-being of the state, be permitted to have a demand on the annuitor, or publick, for his capital; yet it is indispensably necessary for the security thereof, that the annuity, by him demandable, should exceed the rate of interest in the market, so far forth as shall make it the continual interest and advantage

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tage of the annuitor, to attend to a periodical redemption of the debt.

The slightest reflection will perfectly evince, that in case a debt (whether private or public) be incurred whenever occasion and conveniency shall require, and no attention be paid to the discharge thereof; it must, in the natural course of things, increase more and more, until the credit (however great and extensive it shall be, admitting it only to be finite) shall finally become exhausted, and burst in pieces. Nothing, therefore, but a strict attention to the discharge of the debt (whether it be a public or a private one) can possibly prevent a bankruptcy.

And, seeing that in a public debt, the creditor cannot have a demand for the principal; it is perfectly evident, that there can be nothing to rouse the necessary attention of the annuitor or public to the redemption of it, unless the creditor's demand, with respect to the annuity, shall be such as to make it more profitable for the annuitor to apply a surplus revenue to the redemption of the debt, than to apply it to any other service.

The natural incentive or main-spring of human action, is self-advantage and benefit*; and whoever shall expect any man or body of men to be roused into action by any other principle, must, I am persuaded, from the very nature of men and things,

* So far as self-advantage or benefit is connected and interwoven with the advantage and benefit of society, it is the most laudable of all possible pursuits. When the contrary is the case, the pursuit is criminal. What is much to be lamented, the persons who pretend to the greatest patriotism, and to disregard self, are generally those who carry this criminality to the greatest extreme, and ought therefore always to be suspected.

things, be fatally disappointed*. It is in the very nature of things, equally imaginary and vain to expect attention in man, where the natural incentive to such attention shall be wanting, as it would be to expect a motion in mechanics, without a moving power.

It is perfectly evident, that there can be no immediate incentive to the discharge of any debt, (whether public or private) that is not immediately demandable by the creditor, unless the redemption of it shall actually be attended with an immediate profit; which cannot be the case with a public debt that shall consist of any other possible annuities but redeemable annuity stocks, bearing a higher rate of interest than that of the market: because, such stocks only can enable the sinking fund to release a greater revenue than the ordinary interest thereof, which would be saved by applying it to any other service.

It will likewise be observed by the attentive reader, that the extra annuity, which is thus demandable by the annuitant or creditor (and which alone can secure the value of his capital from depreciation) is not prevented from operating as a sinking fund in favour of the annuitant or public, in consequence of its being so demandable by the annuitant: because, seeing, by the properties of the stock, that the tender, to which the annuitant is periodically liable, is always equal to the annuity so by him periodically demandable; and seeing also, that whether the annuitant shall have the

* I would not be understood to mean, that exceptions are morally impossible; they are, however, too improbable, to be pre-admitted as a basis, in any case whatever.

the tender, so to be made, on hand, or whether he shall borrow it in the market, the extraordinary interest appertaining thereto, periodically ceases with such tender; so consequently, the proportion thereof so periodically ceasing, will always be greater or lesser, according as the annuity so demandable by the creditor, shall be greater or lesser.

For example: If the annuitant should make choice of the 5 per cent. stock, he will be annually subject to a tender of 5 hundredth parts of the capital; and if the rate of interest in the market be $4\frac{1}{2}$ per cent. the additional $\frac{1}{2}$ per cent. on such 5 hundredth parts becomes naturally released; although there should be no further revenue applied, than that which is actually demandable by the annuitant.

If for the greater security of the value of his capital, he should make choice of the $5\frac{1}{2}$ per cent. stock, he will be annually subject to a tender of $5\frac{1}{2}$ hundredth parts of the capital; and if the rate of interest in the market be $4\frac{1}{2}$ per cent. the extra 1 per cent. on such $5\frac{1}{2}$ hundredth parts, becomes naturally released, in return for the additional annuity which is so demandable by the annuitant.

If for his still greater security, the annuitant should make choice of the 6 per cent. stock, he will annually be subject to a tender of 6 hundredth parts of the capital; and the rate of interest in the market being $4\frac{1}{2}$ per cent. the extra $1\frac{1}{2}$ per cent. on such 6 hundredth parts, becomes naturally released, in return for the additional annuity which is so by him demandable.

The circumstance, therefore, of the additional annuity being thus demandable by the annuitant, is so far from preventing the operation thereof as
a sink-

a sinking fund, in favour of the annuitor, that its effective power as a sinking fund is in reality increased, in consequence of its being so demandable, in the self-same degree as the security of the value of the capital appertaining to the annuitant, is thereby increased.

There is still another property peculiar to annuity stocks bearing a higher rate of interest than that of the market, and subject to the afore-going limited tender for the redemption, which I must not here omit to take notice of.

It is perfectly evident, from the very nature of things, that if an extra proportion of money be at any time thrown into any particular market, in which the competition of the buyers and sellers shall be free and uncontrouled, the comparative value or price of the property, to be bought and sold in that market, will be thereby naturally increased accordingly.

Now, seeing that the above-mentioned annuity stock is left perfectly free, and open, to the natural competition of the market, with an uncontrollable capacity of rising in value, according to such competition; the value thereof must necessarily increase, in the same manner and degree, as the value of any other kind of annuity would be increased, by throwing the same extra proportion of money into that channel of circulation. And, seeing that the increase in the value of this kind of stock, is proportionate only to one-half of the decrease in the market-rate of interest; it must necessarily follow, that if the public debt shall consist solely of this kind of stock, the decrease that will be produced in the market-rate of interest, by the appropriation of any surplus revenue, as a sinking fund for the redemption of the debt (not exceeding

exceeding the interest or annuity which is demandable by the annuitant) will be double as great as the decrease, which would be produced in the market-rate of interest, by the appropriation of the same surplus revenue or sinking fund, in case the debt should consist of annuity stocks bearing a lower rate of interest than that of the market*.

It has been repeatedly observed, that a sinking fund or surplus revenue, for the redemption of the debt, is the only thing whereby the public credit of any nation can be preserved from depreciating; or whereby it can be restored, after it shall have become depreciated. This being the case, it must consequently follow, that the system of finance ought to be founded and conducted on such principles, as shall secure the sinking fund in its proper line of service, and prevent it from being diverted to other services.

This

* The self-same conclusion will likewise flow from the following consideration, viz.—In the redemption of stocks bearing a lower rate of interest than that of the market, it is perfectly evident, that the price required for the redemption, must naturally increase in the same ratio, as the market-rate of interest shall decrease: wherefore, the one half of the effective power of the sinking fund is consequently swallowed up, by the increasing price so required for the redemption; and the other half thereof, only, operates on the rate of interest. But in stocks bearing a rate of interest as high as, or higher than, that of the market, the price to be required for the redemption, is incapable of increasing: wherefore, the effective power of the sinking fund must in this case be double as great, with respect to producing a decrease in the market-rate of interest, as it would be in the former case.

This remark is by no means a new one; it has been generally made by all those who have taken notice of the progressional power of the sinking fund. Several writers on the subject of public credit, have sufficiently demonstrated, that in case a debt of any given amount, however great, be periodically incurred; and a surplus revenue or sinking fund, however small, be sacredly applied to the periodical redemption of such debt; the sinking fund must infallibly effect the redemption: because, in such case, the increase of the debt will proceed in an arithmetical progression; whereas the redemption thereof, will proceed in a geometrical progression*.

But,

* The truth of this position will appear evident, from the following consideration, viz.—Suppose the rate of interest to be 5 per cent. per annum. In this case, a sinking fund of one million per annum (or rather 500,000*l.* per half-year) will, in 20 years, redeem 33,701,400*l.*; and will therefore pay off a debt of 1,685,070*l.* to be incurred annually during that time.

In 30 years, the same sinking fund would redeem 67,996,200*l.*; and would therefore pay off a debt of 2,266,540*l.* to be annually incurred during that time.

In 40 years, the same sinking fund would redeem 124,182,000*l.*; and would therefore pay off a debt of 3,104,550*l.* to be annually incurred during that time.

In 50 years, the same sinking fund would redeem 216,276,000*l.*; and would therefore pay off a debt of 4,325,520*l.* to be annually incurred during that time.

In 60 years, the same sinking fund would redeem 367,166,800*l.*; and would therefore pay off a debt of 6,119,446*l.* to be annually incurred during that time.

In 70 years, the same sinking fund would redeem 614,420,000*l.*; and would therefore pay off a debt of 8,777,428*l.* to be annually incurred during that time.

In

But, although this position is a mathematical truth, yet those who do not consider it in its mathematical strictness, may be led to draw erroneous conclusions from it; which has indeed been the case with some writers, who have made much noise on this subject.

The conclusion drawn by them from the foregoing position, has been this; that "if a sinking fund be legally appropriated, and invariably applied, to the redemption of the debt, as well in war as in peace, it must necessarily be effectual." But this conclusion does not follow from the position. The position is expressly confined by positive and express limits. It extends no further, than while the increase of the debt shall proceed, by a given amount, or arithmetical progression; as by the addition of the money, that shall be actually borrowed. If, therefore, the debt shall increase in a geometrical progression, (as by a greater and greater capital, over and above the money actually borrowed, or by a greater and greater addition of annuity) the above conclusion does not follow from the position. And
I have

In 80 years, the same sinking fund would redeem 1,019,570,000*l.*; and would therefore pay off a debt of 12,744,625*l.* to be annually incurred during that time.

In 90 years, the same sinking fund would redeem 1,683,460,000*l.*; and would therefore pay off a debt of 18,705,111*l.* to be annually incurred during that time.

In 100 years, the same sinking fund of one million per annum (or rather 500,000*l.* per half-year) would redeem 2,771,320,000*l.*; and would therefore pay off a debt of 27,713,200*l.* to be annually incurred during such 100 years.

It is unnecessary to say more, to prove the truth of the position.

I have demonstrated in my former Essay*, that if the stocks shall depreciate below *par* (whereby the rate of interest in the market shall increase above the rate annexed to the stocks) the increase of the debt must necessarily and unavoidably proceed in such geometrical progression†. The foregoing position, therefore, extends so far forth as it shall respect stocks bearing any rate of interest as high as, or higher than, the rate of interest in the market; but it extends no further.

I thought it necessary thus to shew the point, where the above-mentioned conclusion ceases to have a mathematical connection with the position, from whence it is supposed to be drawn; because that conclusion appears to have been considered by some, as an unexceptionable maxim, fairly and mathematically supported by the position.

The following short and easy reflection would, however (without any regard to considerations of a mathematical nature) be perfectly sufficient to convince the reader, that a legal appropriation of a periodical sinking fund, to the redemption of annuity stocks bearing a lower rate of interest than that of the market, must be, in its effects, unnatural; consequently, un-mathematical and absurd.

If

* See the fifth, seventh, and ninth sections of my former Essay.

† It is demonstrated, in the fifth, seventh, and ninth sections of my former Essay, that this must infallibly be the case, unless the surplus revenue thrown into this channel of circulation, during the time of the advancement of new loans, be equal to the premiums necessarily required for the advancement of those loans.

If a man has a sum of money on hand, and has occasion to make use thereof for any immediate service, will he apply such sum to the discharge of a debt that is not immediately demandable, unless he can borrow an equal sum in the market, for a less interest than that which would be released by the payment of such debt? If he could not borrow an equal sum in the market, without giving a greater interest for it, than that which would be released by the payment of such debt, he must evidently be a loser by making such payment. It is therefore unnatural and absurd to suppose that he should do it. This is precisely the case with the appropriation of a sinking fund to the redemption of annuity stocks, bearing a lower interest than that of the market; and it is, therefore, equally unnatural and absurd to suppose, that a sinking fund should be applied to the redemption of a public debt so composed, while money should be wanted in any other line of service.

But a stock bearing a higher rate of interest than that of the market, naturally and effectually secures the appropriation of the sinking fund to its proper line of service, without the assistance of a positive law; because, if money should be wanted for any other service, such money would be obtainable in the market, for a less revenue than that which would be released, by applying the same sum to the redemption of the stocks. And, the tender to be made for the redemption being limited, so as not to exceed the annuity, the redemption is equally advantageous to the annuitant; because, although it naturally produces a decrease in the market-rate of interest, and thereby causes him to sustain loss on the part so

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paid;

paid ; it likewise produces him a *gain*, just double as great as the amount of such *loss* (whatever it shall be) by that increase in the market-value of his remaining capital, which is naturally and inseparably attendant on such decrease in the market-rate of interest.

The attentive reader will likewise observe, that when the sinking fund is equal to the annuity or interest on the debt, the system of finance will be in its best possible state : because (as was demonstrated in the foregoing second section) so far forth, and no further, the advantages flowing from the decrease in the market-rate of interest, (which is necessarily produced by the application of the sinking fund) naturally flow, in equal proportions, to the borrowers and to the lenders ; whether considered in their conjunct capacity as members of the state, or in their distinct capacities as individuals.

It is unnecessary to proceed further in the enumeration of the properties and effects, peculiar to an annuity stock bearing a higher rate of interest than that of the market, and subject to a limited tender for the periodical redemption of the capital, equal to the annuity therefrom periodically flowing. What has been already said thereon, sufficiently evinces,

I. That such stock is infinitely superior to every other kind of annuities for a public debt : in short, that no other kind of annuities can yield an equal advantage and security to the annuitant, and preserve the state from bankruptcy.

II. That such stock secures the progressive power of the sinking fund from that decrease, to which it must unavoidably be subject, in the redemption of stocks bearing a lower rate of interest

than that of the market; and thereby causes it to produce double the effect, on the decrease of the market-rate of interest, that it would otherwise produce.

III. That the annuitant; consequently, derives from such stock; the same advantages by the increase of the value of his capital; in consequence of the decrease in the market-rate of interest, as could be derived from stocks bearing a lower rate of interest than that of the market; and (as was demonstrated in the beginning of this section) he is subject to only one half of the disadvantages which he must unavoidably be subject to, from stocks bearing a lower rate of interest than that of the market, by the depreciation of the capital-value thereof, in consequence of an increase in the market-rate of interest. And, to sum up the whole,

IV. That such stock confines the increase of the debt to an arithmetical progression; secures the sinking fund to its proper line of service, and thereby causes the redemption of the debt to proceed in a geometrical progression, until the sinking fund shall become equal to the annuity or interest of the debt; at which time; the system of finance arrives at its *maximum*, or best possible state.

P O S T S C R I P T.

S E C T I O N I.

Observations on the present state of the Public Debts, and Finances of Great-Britain; and the practical means of reducing them to the foregoing principles.

IMMEDIATELY after I had written the preceding sections, I had occasion to go to New-York, where I met with some late publications, which enable me to make the following remarks, respecting the present state of our public debts and finances.

The publications to which I refer, are, “ The State of the Public Debts and Finances, at signing the Preliminary Articles of Peace in January, 1783, by Dr. Price;” and some Extracts, containing Observations on the same subject, by the Earl of Stair, and by Mr. Sinclair, member of parliament for Caithness.

These statements do not perfectly agree, as to the quantity of our annual income and expenditure; but as I am speaking of principles, rather than minute particulars, that circumstance is not material.

On the whole it appears, that the nett annual income from our present taxes, is only about

twelve or thirteen millions; and that our annual expenditure, in time of peace (including the charges on the national debt, which exceed nine millions) must amount from thirteen to sixteen millions; as the statements differ. The conclusion that seems generally to be drawn from this situation of our finances, is, that a public bankruptcy is become unavoidable. Mr. Sinclair does not admit this conclusion. He says, in substance, "Taxes and debts are not sufficient, of themselves, to make a nation miserable; and there is still reason to believe, that the opinions now entertained, of our resources being exhausted, and a public bankruptcy being unavoidable, are equally erroneous and ill founded, as the opinion formerly entertained by our ancestors, that such bankruptcy would be produced by fifty or an hundred millions of debt." It is this position, that I shall endeavour to support.

A very easy and simple reflection will at once sufficiently evince, that it is not the quantity of taxes, but the application of them, that produces injury or burthen to a nation*.

For

* The term "application of taxes" may, in its comprehensive sense, be considered as including the collection, as well as the disbursement. In the first section of the Postscript to my former Essay, I endeavoured to point out the primary basis, on which the art of levying taxes must depend; and, to shew that the burthen or difficulty, attendant on the collection of the same quantity, would be greater or lesser, according to the method of levying it. But an investigation of the principles of levying taxes, would exceed the limits of the present Essay. The term "application of taxes," must, therefore, here be understood, as appertaining to the disbursement, pre-supposing them to be properly collected.

For example: If taxes or contributions be raised in any district, and applied to the making of a public road, canal, or bridge, whereby the expence of the necessary conveyance of property, from one part of the district to another, shall be lessened; and whereby the value of the estates of the inhabitants, shall, in consequence thereof, be advanced in a greater amount, than the taxes or contributions so raised and applied, shall amount to; it is perfectly evident, that those taxes or contributions (instead of being a burthen) are attended with an actual profit.

It is also perfectly evident, that the same argument holds equally true, if taxes or contributions be applied to the making of any public machine, whereby the necessary circulation, or conveyance of property from one person or place to another, shall be attended with a less expence, than it would be, if such machine was not made use of. It is therefore perfectly evident, that it cannot be the quantity of the taxes, that constitutes their burthen; it must be the application of them.

Whoever will reflect a single moment (without flying from the subject) must be convinced, that public credit is neither more nor less, than a public machine for bringing capitals into action. The actual capitals that shall be thereby brought into action, may indeed be applied to one use or to another; to a good one, or to a bad one. But this has nothing to do with the machine; because, they might be applied in exactly the same manner, if they were brought into action, without the help of such machine. The use, therefore, to which the capitals may be afterwards applied, has no more to do with the machine, by which they were brought into action, than the use to which
a china

a china vase may be applied, has to do with the roads, canals, or bridges, over which it passed ; or with the ship, that brought it safely round the Cape of Good Hope.

The debt* or machine, in itself considered, is therefore attended with advantage or disadvantage, according as it shall cause the expence of bringing capitals into action, to be lesser or greater, than that particular expence would be, if such machine was not made use of. This advantage, or disadvantage, depends entirely (like the advantage or disadvantage of every other machine) on the manner, in which it shall be constructed and conducted.

That threatening cloud which now hangs over our financial hemisphere, pregnant with destruction, proceeds entirely from an error in the formation and management of this machine : an error truly simple, and easy to be rectified.

The principles of public credit (considered as a machine for bringing capitals into action) were not investigated : it cannot, therefore, be surprising, that such an error should have taken place.

Numbers of people have indeed demonstrated, that a surplus of revenue, appropriated to the debt, must continually operate in a geometrical progression, in the discharge thereof : but they omitted to demonstrate likewise, that a deficiency
of

* I use the terms Debt and Credit promiscuously ; because, there can be no possible existence of the one, without the other. It is morally and absolutely impossible that there can be a Debt without a Credit, or a Credit without a Debt.

of revenue, so appropriated, must continually operate in a geometrical progression, in the increase of the debt. In the seventh and ninth sections of my former Essay, it is demonstrated, that the debt must thus increase in a geometrical progression, unless there be a *surplus* of revenue, (in addition to the interest) thrown into this channel of circulation during the time of the advancement of new loans, equal to the *premiums* necessarily required for those loans.

This position is indeed sufficiently plain and simple, without much trouble of demonstration, after things are once hunted up into fair daylight. It is perfectly evident, for instance, that if a premium be required for a new loan, and a payment equal to that premium, be not made; the quantity, by which the payment shall be deficient, must necessarily be an increase of debt, beyond the quantity of the actual loan. And, seeing that by the unalterable laws of Nature, a surplus must mathematically accumulate, in a geometrical progression; so likewise, by the very same unalterable laws of Nature, a deficiency must mathematically accumulate, in a geometrical progression: for, a deficiency is, mathematically, a negative surplus. And further, seeing that the principal is not demandable, and has therefore only a nominal, or ideal existence; the ESSENTIAL accumulation must necessarily be in the interest, in which the ESSENTIAL debt, or actual demand, consists: for, the laws of Nature care not for empty names: the laws of Nature govern the ESSENCE of things.

A public debt, thus conducted, becomes a very bad machine; because, it occasions the rate of interest (which is, properly speaking, the expence

pence of bringing capitals into action, and of keeping them in motion) to increase; and thereby, not only checks the spirit of industry and improvement, but likewise causes the capital-value of fixed property to depreciate.

Our public debt has been conducted after this manner; and this is the sole cause of the present discordant state of our finances, the increase of our rate of interest, and the consequent depreciation of our stocks and lands.

But, if our debt be put into a new arrangement, whereby the increase shall, in future, proceed in an arithmetical progression, and the redemption in a geometrical progression; it will, from that moment, become a most advantageous machine. It will, from that moment, produce a regular, a steady, and a rapid decrease in the rate of interest; and thereby, convey the most happy effects to every rank and order of the state.

An increase of taxes will indeed be required: but these additional taxes will be so far from being any addition of burthen to the members of the state, that they will, regularly and periodically, flow back to the public at large, with a much greater accumulation of profit, than could be made by applying the same amount to any other possible use whatever.

It may perhaps be considered as a new doctrine, that taxes should produce a profit to those who pay them. No man, however, can hesitate a moment at acknowledging its truth, in the instances I have mentioned, of making public roads, canals, and bridges; or any public machine, whereby the necessary circulation or conveyance of the productions or commerce of a country,
from

from one person or place to another, shall be performed at a less expence.

It is perfectly evident, that the periodical interest on a capital, is the periodical expence of keeping that capital in motion; whether it be applied to the support and improvement of commerce and industry, or to any thing else. The interest, therefore, of any capital, is perfectly and exactly similar to the expence of the carriage or freight of merchandize. It is immaterial how far the capital may be a man's own, or how far it may be a borrowed one; in the same manner as it is immaterial, whether the ship or the waggon, whereby merchandize may be conveyed, shall belong to the owner of that merchandize, or to another person. The appropriation, therefore, of any tax to the purpose of rendering the interest on money cheaper, is of the same nature, as the appropriation of a tax to the purpose of making roads, canals, or bridges. It is, I say, of the same nature; but it is infinitely more extensive in its effects: because, a decrease in the rate of interest, appertains to every part of the capital-property of a state, as well immoveable as moveable. Where it does not make the periodical expence less to the industrious occupant (which, for instance, is the case with respect to the rents of land) it necessarily makes the capital-value appertaining to the proprietor, greater.

When we reflect, that the rate of interest has this inseparable connection with every part of the capital-property of a state, we cannot but see, that even a small alteration in the rate of interest, must be attended with an immense effect.

I have not any thing to refer to, whereby to form an estimate of the capital-property of Great-Britain;

Britain; but if we take it, at random, to be a thousand millions, I should suppose that we must be far within the bounds of its reality. In this case, a decrease of 1 per cent. in the rate of interest, naturally produces an advantage of ten millions a year, to the members of the state: a decrease of 2 per cent. in the rate of interest, produces an advantage of twenty millions a year, to the members of the state: a decrease of 3 per cent. in the rate of interest, produces an advantage of thirty millions a year, to the members of the state*.

It

* Although our public debt was never conducted on any regular principle, yet, until it became grown out of all reasonable shape, it was productive of an immense advantage. During the first half of the present century, it produced a decrease of more than 4 per cent. in the rate of interest. It was solely from this cause, that (in spite of the increase of taxes) the wealth and prosperity of the nation increased to a degree, that it had never known before. This increase of wealth and prosperity, was attributed to the increase of our commerce and industry, during that period; which was certainly just. But, the increase of our commerce and industry, was (as I observed in the second section of the Postscript to my former Essay) a natural consequent of the decrease in the rate of interest; whereby, the industrious were enabled (with the same periodical resources that they had before) to employ larger and larger capitals, for carrying their respective undertakings and improvements into effect. The same effect, will for ever flow from the same cause. When the rate of interest decreases, larger capitals will be put in motion at a smaller expence; and the industry, commerce, and prosperity of the state, will naturally increase, as the capitals so employed shall become increased. The capitals so employed, are the only possible foundations, on which commerce and industry can be supported.

It has been sufficiently shewn already (it is, indeed, a maxim universally received and acknowledged) that a regular appropriation of a sinking fund to the redemption of the debt, must mathematically produce this happy decrease in the rate of interest. The raising of additional taxes, therefore, and applying them effectually to this service, must consequently be attended with a profit, not with a burthen, to the members of the state.

But, it must nevertheless be considered, that the circulation of property in a state, can no more be forced out of its natural pace without injury, than can the circulation of the juices of the animal body. The increase of the taxes ought, therefore, to proceed no faster, than the advantages flowing from the application of them, shall naturally return. It ought, in short, to proceed progressively, like the advances of the human frame, from infancy to manhood.

Twenty years, and more, are naturally required, for an infant to proceed progressively to his maturity. Should it be attempted, by medicines or ointments, to force him on to that maturity in twenty weeks, or twenty months, the desired effect would not be produced; but the attempt would be attended with destruction. In like manner, I should be inclined to believe, that if our taxes were attempted to be increased at once, from twelve to sixteen millions (which Lord Stair considers would be necessary, in order to defray our peace expenditures within the year) the whole machine of circulation, would be thereby thrown into a very violent agitation, if it did not even burst. I am, however, very far from believing, that an increase of half a million, or three quarters of a million, a year, if properly applied, would

would oblige the nation to halt at sixteen, or even at six-and-twenty millions, should such increase ever become necessary; because, by thus increasing the taxes gradually, the advantages naturally flowing from the decrease of the rate of interest, would always precede each increase of the taxes, except the first. It will not, however, be required to carry the gradual increase, in our present case, much further than sixteen millions, to produce every desirable effect.

As our present revenue falls short of our expenditures, our debt must, of course, go on increasing, until the increase of the revenue shall stop it. But this circumstance will not prevent the decrease of the rate of interest. If the increase of the debt be thrown into an arithmetical progression, and the redemption into a geometrical progression; the decrease of the rate of interest, with all its happy attendants, will immediately flow therefrom, as a mathematical consequent. We have, therefore, nothing to do, but to establish these progressions; and every desirable effect will, from thence, mathematically flow, in the regular course and order of Nature; whose immutable laws pervade and govern all things, in their progressive motions, from the cause to the effect*.

In

* If these progressions be not established, a public bankruptcy is indeed mathematically inevitable. But our bankruptcy is not so very near at hand, in the natural order of its progression, as may perhaps be imagined. It cannot arrive, in the natural order of its progression, till the interest of the debt shall exceed the revenue. Our present revenue (even by the very worst accounts) exceeds the interest of the present debt, by more than

In order to establish these progressions; and, at the same time, to secure the annuity appertaining to the creditors, from being reduced, as the market-rate of interest shall decrease; it is necessary, agreeable to the principles ascertained in the foregoing sections, to establish a new stock of annuities, bearing a higher rate of interest than that of the market, subject to a limited tender, for the periodical redemption of the capital, equal to the annuity therefrom periodically flowing: and to offer to the present creditors, as much capital in such new stock, as shall be equal in value to the present value of their present capitals or annuities; together with a small addition (1 per cent. or even less, will be sufficient) by way of turning the scale, as one may call it, in favour of the new channel.

To make myself thoroughly understood, it may not be amiss to take a brief survey of our public debt, as it now stands; and from thence to ascertain the ratio, or rate of interest, that will be necessarily required for the new stock, in order to establish the above progressions, with the smallest revenue;

two millions and an half per year; so, that a continuance of our old line of practice, would not produce the bankruptcy naturally, till these two millions and an half (together with such other taxes as might be added) should become eaten up by the progressive increase of the debt. A bankruptcy might indeed be produced by insurrection, and force of arms, at any time: but so, a castle might be knocked to pieces. The circumstance of our peace expenditure being greater than the revenue, can no way contribute to hasten the natural progression of the bankruptcy, otherwise than by opening a new avenue, as it were, for the introduction of imaginary reformations.

revenue, that can be consistent with the safety and security of the public, or of the creditors.

Our public debt, at the commencement of the present year, 1783, consisted, according to Dr. Price's statement, of the following articles; viz.

I. 169,613,254*l.* of annuity stock, bearing 3 per cent. per annum.

II. 26,750,000*l.* of annuity stock, bearing 4 per cent. per annum.

III. Sundry determinate or temporary annuities of different lengths, worth (reckoning interest at 5 per cent.) 19,354,455*l.*

IV. Sundry out-standing debts remaining unfunded, amounting to 36,867,277*l.* *

Lord Stair is of opinion, that the unfunded debts (including the necessary premiums that will be required for funding them) will amount to near forty millions. It indeed often happens, even in private expenditures, that the previous estimates of charges fall considerably short of the charges themselves. I shall, therefore, consider the unfunded debts, as his Lordship does.

These articles, it must be confessed, run up to a much greater amount, than could be wished. We must not, however, form our idea of the debt, from the nominal aggregate of these articles. The nominal aggregate is indeed (taking the unfunded part at near forty millions) more than two hundred and fifty-five millions; but the real amount, or actual value, is less than one hundred and eighty-eight millions.

According

* Twelve millions of this have been since funded; but this circumstance is not very material.

According to the principles demonstrated in the seventh section of my former Essay, the point at which the value of our 3 per cents. would stand recovered, as a natural consequence of a discontinuance of the extraordinary demand for money, after the loan of 1782, would be about 68 $\frac{1}{2}$ l.*; and the point of collateral appreciation, to which they would be naturally carried for a time, by the flowing out of the money, that had been locked up, on the principles of speculation (as explained in the latter part of the seventh section, and in the second section of the Postscript to my former Essay) would be about 76 $\frac{1}{2}$ l.†: but this, it must be observed,

* That is, the geometrical mean between 86 $\frac{1}{2}$ l. to which I suppose they fell when the sinking fund ceased to be applied to their redemption, at the commencement of the war, and 54 $\frac{1}{2}$ l. to which, they were carried by the geometrical progression of the debt.

† Supposing the extraordinary demand for money, to have been such, on an average, during the war, as to produce an increase in the comparative value of capitals in the ratio of 6 per cent. (or, which is all the same, to require a premium of 6 per cent. for new loans) which I believe was pretty nearly the case with our loans; the geometrical progression of the debt, in that ratio, would have carried the 3 per cents. down only to about 60 $\frac{1}{2}$ l. But this depreciation in the capital value of the stock being greater than the interest produced thereon, it naturally became more profitable to lock up money on speculation, while such extraordinary demand continued, than to lay it out in the stocks. In consequence of which, the ratio of the progression was naturally increased; and the stocks, of course, fell lower. And, supposing this difference between 60 $\frac{1}{2}$ l. and 54 $\frac{1}{2}$ l. (which is about 12 per cent.) to have been produced by this locking up of money on speculation; the flowing out of that money, on the discontinuance of the extraordinary demand,

observed, is on a supposition that no material debt should be remaining out-standing; and that our revenue should be equal to the ordinary peace-expenditure. Neither of these being in fact the case, the extraordinary demand for money does not in fact discontinue; and consequently, the 3 per cents can neither fly up to 76*l.* nor settle, either at 68*l.* or at any other point whatever, until the debt shall be thrown into a new progression on the one hand, or until the revenue shall become equal to the ordinary expenditure, on the other.

The above-mentioned out-standing debt, must carry the point of recovery of the 3 per cents down to about 63*l.* in despite of any thing that can now be done to prevent it. It is capable of carrying them much lower. The present state of our financial system, cannot preserve them higher, than about 63*l.* if so high: it may send them down to any thing, almost at pleasure.

Our 4 per cent. stocks are not worth quite so much, in proportion to the annuity, as the 3 per cents; because (each being subject to redemption, at the pleasure of Government) the 4 per cents are subject to the same depreciation as the 3 per cents; but have not the same capacity for appreciation. This difference is not, however, worth regarding, in our present case; because, in the actual state of our system of finance, both of them must depreciate; neither of them can appreciate. They may indeed flutter occasionally, a little higher and a little lower; but they cannot stand;
and

demand, would naturally carry those stocks about 12 per cent higher than 68*l.* (which is about 76*l.*) during the time of the flowing out of such money; but no longer:

and must, therefore, flutter on a descending center. The same observation holds equally true, with respect to any other stock bearing a lower rate of interest, than that of the market.

Should the 3 per cents descend to 60% before they can be supported*, (which may, in all rational probability, be the case) a 5 per cent. stock would then be subject to the same depreciation, as a 4 per cent. or as a 3 per cent. stock. Should the 3 per cents be checked in their descent at $63\frac{3}{9}\%$ (which I can scarcely conceive to be possible, much less probable) even then, the market-rate of interest would be $4\frac{5}{9}\%$ per cent. and a 5 per cent. stock, subject to a limited tender for its redemption, equal to the annuity, would be worth only $102\frac{2}{3}\%$. This $2\frac{2}{3}\%$ is much less than the premium ordinarily required for new loans; and is, consequently, insufficient to preserve a progressive redemption of the debt, while a sum equal to the revenue, shall be required in the other lines of service. A 5 per cent. stock would, therefore, be ineffectual in our present case; unless our revenue should be increased, beyond the amount of our ordinary expenditure; which, I should think, would be infinitely too much to be done at once; and more especially so, as there is no kind of necessity for it.

Supposing, what I cannot seriously suppose, that the 3 per cents should be checked at $63\frac{3}{9}\%$ in their central depreciation; a 6 per cent. stock, subject to a tender, for its periodical redemption, equal

* I speak of the central value. They must fall lower temporarily, in despite of any thing that can be done to prevent it.

equal to the annuity, would be worth $111\frac{27}{43}l.$ * Supposing the depreciation of the 3 per cents to be checked at 60*l.* (which I think may be done, with respect to their central descent, if taken in time) the 6 per cent. stock would be worth $109\frac{1}{11}l.$ Either of these degrees above par, sufficiently exceeds the premium ordinarily required for new loans; and thereby affords a sufficient security for the periodical appropriation of money, to the redemption of the debt, whatever may be wanted for other services.

The establishment of a 6 per cent. stock, subject to a periodical tender for its redemption, equal to the annuity therefrom periodically flowing, will therefore place the debt in a geometrical progression of redemption; and will, at the same time, cause the future increase of the nominal capital, to be less than the quantity of money, that will be obtainable for it.

Now, seeing that when the 3 per cents are worth $63\frac{3}{19}l.$ this 6 per cent. stock is worth $111\frac{27}{43}l.$; so, consequently, 100*l.* of 3 per cent. stock, and $56\frac{1}{5}l.$ of this 6 per cent. stock, are, in

* When the 3 per cents are worth $63\frac{3}{19}l.$ the market-rate of interest is $4\frac{3}{4}$ per cent. Wherefore, by the canon deduced in the second section, To the market-rate of interest

-	-	-	-	-	-	$4\frac{3}{4}$
add the rate annexed to the stock,	-	-	-	-	-	6
Total						$10\frac{3}{4}$

Then say, As the half sum, $5\frac{3}{8}$, is to 100*l.* so is 6, the rate annexed to the stock, to $111\frac{27}{43}l.$ the value of the stock.

in this case, equal in value to each other*. And hence, if 57 *l.* of this 6 per cent. stock, be offered for 100 *l.* of 3 per cent. stock, a turn of the scale, as one may call it, will be given in favour of the 6 per cent. stock; and the 3 per cents will naturally be thereby converted into 6 per cents.

In like manner, if 76 *l.* of the 6 per cent. stock, be offered for 100 *l.* of 4 per cent. stock; as also, if a proportionate capital in the 6 per cent. stock, be offered for the temporary or determinate annuities, according to their respective values, the whole† will be converted into 6 per cent. stocks, and our public debt will stand as follows; viz.

I. In the room of	
169,613,254 <i>l.</i> of 3	
per cent. stock, we	£.
shall have - -	96,679,555 of 6 per cents.
II. In the room of	
26,750,000 <i>l.</i> of 4	
	per

* Should the 3 per cents settle down centrally to 60 *l.* the market-rate of interest will be 5 per cent. Wherefore, in that case, the value of the 6 per cent. stock, will be 109 $\frac{1}{11}$ *l.*; and 55 *l.* of the 6 per cent. stock will, consequently, be equal in value to 100 *l.* of 3 per cent. stock.

† When I say the whole, I would not be understood to mean that there would not be a single exception. There would doubtless be a few exceptions of aged people and orphans, whose provision may consist of public annuities, and who care little as to the capital-value of them: but these would be the only exceptions; and these would not, in the nature of things, amount to any thing material in the great scale. The objections that may appear, will be considered presently.

per cent. stock, we shall have - -	20,330,000 of 6 per cents,
III. In the room of the temporary or determinate annuities, we shall have as much 6 per cent. stock, as is worth a turn of the scale more than 19,354,455 <i>l</i> . reckoning interest at 5 per cent. which, supposing them all to be transcribed, will be about -	17,750,000 of ditto,
IV. In the room of the unfunded debts, we shall have as much 6 per cent. stock, as is worth near forty millions; which, for even numbers, let us call - - -	35,240,445 of ditto*.
TOTAL, £.	170,000,000 of 6 per cents,

It is necessary, however, to observe, that the conversion of the debt cannot be effected, but by the voluntary act, or transcription, of the creditors;

* If we reckon 100*l*. of 3 per cent. stock, to be worth 63*l*. this quantity of 6 per cent. stock, will be worth more than thirty-nine millions and a quarter, which one may call near forty millions.

tors; and on this account, it becomes natural to ask, Will the creditors accede to the conversion, on the foregoing terms?

To this question it may be answered, that, admitting the creditors to be actuated by the principle of self-advantage and benefit (which, as I formerly observed, I consider to be the *primum mobile*, or main spring of human action) they will gladly accept of the foregoing terms. Nay, if 56*l.* or 55*l.* or even 54*l.* of such 6 per cent. stock was offered for 100*l.* of 3 per cent. stock (and so in proportion for the 4 per cents, &c.) the creditors would accept of either of those offers, rather than let the debt stand unconverted. It would indeed be better for the public, to give 60*l.* of the 6 per cent. stock for 100*l.* of 3 per cent. stock, and so in proportion, than to let the debt stand seven years unconverted. But it would be better for the creditors, to accept of 54*l.* of the 6 per cent. stock for 100*l.* of the 3 per cent. stock, and so in proportion, than to let it stand seven months unconverted. There is, therefore, much less reason, that Government should give 60*l.* than that the creditors should accept of 54*l.** If 57*l.* be given, the advantage will be mutual and equal,
as

* Should the 3 per cents fall only to 57 $\frac{1}{7}$ *l.* (but, if my *data* be any thing near the truth, they must in fact fall much lower within less than the above-mentioned seven months, unless the debt shall be thrown into a new progression) 53 $\frac{4}{7}$ *l.* of the 6 per cent. stock, would then be equal in value to 100*l.* of 3 per cent. stock. It would not, however, be consistent with that real justice and integrity which ought always to be observed, for Government to take unequal advantages in the conversion of the debt, although the creditors (to avoid greater disadvantages) would accede to them.

as nearly as may be. It will differ from equality only in this, that it will give a turn of the scale in favour of the creditors. This turn of the scale is, however, properly speaking, rather a matter of generosity, than of necessity*.

These observations will appear perfectly evident, by taking a retrospective view of the state of our stocks, and by supposing an offer to have been made for converting the debt into this 6 per cent. stock, during the last peace, or during the peace before last.

During the peace, which preceded the war of 1755, our 3 per cents were above par. They had

* The *data* on which I write this Postscript, are too loose and imperfect, to enable me to determine with precise exactness, the quantity of 6 per cent. stock, that ought in fact to be given, in order to produce the greatest possible justice between the public and the creditors; but the *data* now before me, produce the following results, viz.

I. That the average of the market values of the 3 per cents, during the three months of January, February, and March, now coming, must be somewhere between the extremes of 59*l.* and 53*l.*

II. That the center point to which the 3 per cents would stand recovered, as a natural consequent of a discontinuance of the demand for loans, must be somewhere between the extremes of 63*l.* and 60*l.* And,

III. That the quantity of 6 per cent. stock, to be given for 100*l.* of 3 per cent. stock, in order to produce the greatest possible justice to all parties, must be somewhere between the extremes of 56½*l.* and 55*l.*

So far as my *data* and results shall be in reality true or false, so far the first of these results will stand confirmed or contradicted, by the actual prices of the stocks in Exchange-Alley.

had not, however, any secure capacity above par; because, as the tender that might be made for their redemption, was subject to no limit, the interest or annuity was consequently subject to reduction, whenever the value of the stock was above par.

Now, when a 3 per cent. stock is at par, the market-rate of interest is 3 per cent.; and a 6 per cent. stock, subject to a periodical tender for its redemption, equal to the annuity (which is the stock here proposed for the present conversion) is then worth $133\frac{1}{3}\%$; so that 100% of our 3 per cent. stock was then equal, in value, to 75% of such 6 per cent. stock. But the 75% of 6 per cent. stock would have had the following contingent advantages, which the 100% of 3 per cent. had not; viz. The 75% of 6 per cent. stock would have had a secure and unbounded capacity of rising in value; whereas, the 100% of 3 per cent. stock had no such capacity. Moreover, the 6 per cent. stock would likewise have had an immense security against a depreciation, which the 3 per cent. stock had not; insomuch, that the same causes that would carry the value of the 100% of 3 per cent. stock down to 50% would not carry the value of the 75% of 6 per cent. stock lower than 75%. It is perfectly absurd, therefore, to suppose, that the creditors would not gladly have accepted of 75% or even much less, of such 6 per cent. stock, for 100% of 3 per cent. stock, at that time*.

During

* If 80% of 5 per cent. stock, or $87\frac{1}{2}\%$ of 4 per cent. stock, subject to the same principles of redemption, had at that time been offered for 100% of 3 per cent. stock, the

During the peace of 1763, our 3 per cents were at about 88 $\frac{1}{2}$.* They would have been at about 85 $\frac{1}{2}$. (as I mentioned in the second section of the Postscript to my former Essay) had no surplus monies been thrown into that channel, for their redemption. I shall, therefore, for the sake of an even rate of interest, consider them worth 85 $\frac{1}{2}$ $\frac{1}{2}$ at that time. The market-rate of interest was then 3 $\frac{1}{2}$ per cent. so that a 6 per cent. stock, subject to the above-mentioned tender for its redemption, would then have been worth 126 $\frac{6}{15}$ $\frac{1}{2}$; and, consequently, 100 $\frac{1}{2}$ of 3 per cent. stock, and 67 $\frac{6}{7}$ $\frac{1}{2}$ of such 6 per cent. stock, would then have been equal in value to each other.

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the offer would have been equally acceptable to the creditors (except, that the security against depreciation would not have been so extensive) and a much less revenue would have been required by these stocks, than by a 6 per cent. But the 3 per cents would, indeed, have been then supported, without converting them into a higher stock, had they been subjected to a limited tender equal to the annuity. The creditors would likewise have gladly accepted a tender equal to the annuity; because, although they would in effect have sustained thereby, a reduction of interest on the part so to have been tendered; yet, they would always have gained just exactly double as much, by the consequent appreciation of the value of the remaining capital; which is the *maximum*, or greatest possible gain, that could be produced by any tender, whether greater or lesser than the annuity.

* They indeed ran up above 90%. (I cannot inform myself exactly how high) for a time, in consequence of the flowing out of the money that had been locked up on the principles of speculation; but they fell down again to 88% and would have fallen lower (and with much more speed) had they not been checked by the sinking fund.

The 3 per cents had then a capacity for rising in value, from $85\frac{5}{7}l.$ to $100l.$ but no further; and, it must be observed, the actual appreciation could not be produced, without the appropriation of a surplus or sinking fund; which depended on the pleasure of Government. It must likewise be observed, that there could be no reason ever to expect such appropriation; because, a sinking fund could not be so applied without loss, when money should be wanted in any other line of service. The mere capacity was, therefore, of little worth.

The 6 per cent. stock would have had an unbounded capacity for rising in value, in consequence of an appropriation of a surplus, or sinking fund. It would, likewise, have been advantageous for Government, to have applied such surplus, or sinking fund, whether money should or should not be wanted for other services; so that an actual appreciation in the value of the stock, would have been rendered certain. Moreover, the 6 per cent. stock would have had a security against depreciation, which the 3 per cent. had not; insomuch, that the $100l.$ of 3 per cent. stock must fall to $50l.$ before the $67\frac{6}{7}l.$ of 6 per cent. stock could have fallen below $67\frac{6}{7}l.$ It is perfectly absurd, therefore, to suppose, that the creditors would not gladly have accepted of $67\frac{6}{7}l.$ of such 6 per cent. stock, for $100l.$ of 3 per cent. stock at that time*.

The

* If $72\frac{6}{7}l.$ of 5 per cent. stock, or $80\frac{5}{14}l.$ of 4 per cent. stock, subject to the same principles of redemption, had been offered for $100l.$ of 3 per cent. stock; either of these offers would, at that time, have been equally acceptable to the creditors; excepting, that the security against depreciation would have been less extensive; and the revenue required by these stocks, would have been much less than the revenue required by the 6 per cent. stock.

The creditors have much more reason to wish a conversion of the value of their capitals and annuities, into 6 per cent. stocks at this time, than they then had. During the last peace, our revenue yielded a surplus, after paying the expenditures. From this surplus, and from a continuance of peace put together, there might have been a hope of an appreciation in the value of the stocks: but that is not the case now. Our revenue now falls short of the ordinary expenditures; and there is, consequently, nothing to produce an appreciation in the value of the stocks, nor even to prevent their continual depreciation, while they shall be under par: because, while they are under par, the rate of interest in the market must be higher than the rate appertinent to the stocks; and, consequently, an appropriation of money to their redemption (while it shall be wanted for other services) must be attended with loss: so that there can be no progression of redemption, to support them. A hope of an appreciation in the value of our stocks in their present state, must, therefore, be imaginary and vain: and, a security against further depreciation, must, consequently, be the only immediate object, that the creditors can now have to aim at.

I remember to have heard, many years ago, an old and truly wise maxim; viz. "That the only rational method of pursuing profit at any time, is to proceed armed and guarded against loss." According to this maxim, the only basis, on which there can be any rational hope of an appreciation in the value of our stocks, must be a basis that shall furnish a security against their further depreciation,

By

By accepting of 57*l.* of 6 per cent. stock, subject to the foregoing principles of redemption, in exchange for 100*l.* of 3 per cent. stock, and so in proportion for the 4 per cents, &c. the creditors will receive the full value thereof (and rather more than the full value thereof) in exchange, for the time being. They will likewise preserve an unbounded capacity for its appreciation, and obtain, at the same time, a security of 14 per cent. against further depreciation*; whereby, that depreciation will be effectually prevented, and the appreciation effectually secured†.

In short, by accepting of 57*l.* of the 6 per cent. stock, in exchange for 100*l.* of the 3 per cent. stock, and so in proportion for the 4 per cents, &c. the creditors will do neither more nor less, than give up an annuity of 3*l.* the capital-value whereof must for ever depreciate, in exchange for an annuity of 3*l.* 8*s.* 4 $\frac{1}{2}$ *d.* the capital-value whereof is at present greater than the former, and must for ever appreciate.

If, therefore, it be admitted, and I think it may safely be admitted, that self-advantage and benefit is the natural *primum mobile*, or main spring of human action; it must be more than absurd, to suppose,

* For, the same causes that would carry the capital-value of 100*l.* of 3 per cent. stock, down to 50*l.* would not carry the capital-value of 57*l.* of this 6 per cent. stock, lower than 57*l.*

† It is necessary, however, to observe, that if the conversion of the debt should be delayed, till the 3 per cents settle down centrally to 53, or 54*l.*; a 6 per cent. stock would then be ineffectual, for the same reasons that a 5 per cent. stock would now be ineffectual. In such case, therefore, recourse must be had to a higher stock.

suppose, that there should be any hesitation on the part of the creditors.

Our public debt being thus converted into one hundred and seventy millions of 6 per cent. stock, subject to a periodical tender for its redemption, equal to the annuity or interest therefrom periodically flowing; the annuity thereunto annexed, will be 10,200,000*l.*; and the future BUDGETS, as they are called, will stand after the following manner, whether in peace or in war; viz.

WANTED, for the payment of the interest or annuity on the debt, - - - -	£. 10,200,000
For the tender to be made for its redemption, the same as the interest, whatever it shall be, - - - -	10,200,000
For the civil, the maritime, and the military establishments, &c. &c. including likewise the tender to be made to- wards the redemption of the loan that shall now be wanted; suppose, for even numbers, *	7,600,000
Total,	£. 28,000,000
The	

* I have here, for even numbers, supposed a larger sum than is mentioned in Lord Stair's estimate, although that exceeds any other I have seen. It would be presumption in me to give an opinion, that his Lordship's estimate was too high or too low: I shall therefore only observe as a general maxim, that it is better to fund a pound too much, and to pay the interest thereon, than

The amount of the revenue, suppose, according to Lord Stair's statement, - - -	£. 12,000,000
LOAN, required to meet the sum wanted, the interest whereof, only, will be required to be raised by taxes, - - -	16,000,000
Total, - - -	<u>£. 28,000,000</u>

The studious reader will observe, that all the reasons that have been given, relative to a conversion of the debt into a 6 per cent. stock, hold equally strong, both with respect to the borrower and the lender, for making the future loans, for a time at least, on a 6 per cent. stock*. On this account, it may not be amiss to say a word or two on the principles of funding, in addition to what was mentioned in my former Essay.

The principles deduced in my former Essay, considered literally, extend no further than to stocks that do not bear a higher interest than that of the market. Those principles, therefore, literally

than to let a shilling remain out-standing. Whoever will consider the discount necessary for turning an out-standing debt into ready money, will be at once convinced of the truth of this maxim; more particularly, when he considers that the primary creditor must necessarily make his charge accordingly.

* Until the market-rate of interest shall have become so far decreased, as that a lower stock shall afford a sufficient security for its redemption; for, without that, there is no natural foundation, whereon the stock shall stand secure from depreciation, or the state from bankruptcy.

rally considered, do not of necessity hold in the present case. They extend to the present case so far forth only, as they shall be taken in an elemental (in contradistinction to a literal) sense.

The grand practical principle of funding, consists in preserving such a balance, or equilibrium, in the circulation of money, through the hands of the lenders, as that the rate of interest shall not continually rise higher and higher; and thereby cause the value of the stocks to depreciate lower and lower, in consequence of new loans.

In order to prevent this increase in the rate of interest, or depreciation in the value of the stocks, when loans are made on stocks that do not bear a higher interest than that of the market, it is necessary (as was demonstrated in the seventh section of my former Essay) that the premium required for any new loan, should consist of an additional annuity, of the same continuance as the time limited for the advancement of the loan: but this is not literally necessary, in funding on stocks that do bear a higher interest than that of the market.

This position is no other, considered elementally, than that the *surplus* revenue, necessarily required in addition to the market-interest, in order to prevent the market-rate of interest from increasing, in consequence of an extraordinary demand for money, must be equal to the *premium*, necessarily required in consequence of such extraordinary demand for money.

Now, stocks bearing a rate of interest higher than that of the market, have naturally a surplus revenue (in addition to the market-interest) inherent in them; and, consequently, an additional annuity cannot be necessary, unless the extraordinary

ordinary demand for money should be such, as that the premium so required, should be greater than the surplus annuity, so inherent in the stock. If the surplus annuity, so inherent in the stock, shall exceed the premium required in consequence of the demand for money, the market-value of the stock must necessarily rise higher and higher; in spite of such demand for money.

For example: Suppose our 3 per cents to get down, centrally, to 60*l.* before the conversion of the debt can be effected. In this case, the market-rate of interest will be 5 per cent.; and a 6 per cent. stock (subject to the before-mentioned principles of redemption) will be worth $109\frac{1}{11}$ *l.*; so that our debt, being converted into one hundred and seventy millions of 6 per cent. stock, will be worth in the market, 185,454,545 *l.*; the market-interest whereon, at 5 per cent. is 9,272,727 *l.* But the annuity, or interest annexed to the stock, will be 10,200,000 *l.* which exceeds the said market-interest by 927,273 *l.*; and, consequently, any loan requiring a less premium than 927,273 *l.* cannot prevent the market-value of the 6 per cent. stock from rising higher and higher.

It must likewise be observed, that this surplus continually increases, as the value of the stock rises. For example: When the stock is at $109\frac{1}{11}$ *l.* the market-rate of interest is 5 per cent. and the market-interest on the value of the stock is $5\frac{4}{11}$ *l.* out of the 6 *l.* so annexed to the stock; so that the 6 *l.* thus annexed to the stock, furnishes, then, a surplus of only $0\frac{6}{11}$ *l.* or 1-11th part of the annuity, or interest, so annexed to the stock. But when the stock rises to 120 *l.* the market-rate of interest is then only 4 per cent.; and the market-interest on the value of the stock is only $4\frac{4}{5}$ *l.* out
of

of the 6*l*. so annexed to it; so that the 6*l*. thus annexed to the stock, furnishes then a surplus of $1\frac{1}{3}$ *l*. or 1-5th part of the whole annuity, or interest, so annexed to the stock.

This being the case, the only thing necessary to be done, with respect to giving the premiums for new loans, will be, to establish 6 per cent. stock, from time to time, for the subscribers, at a rate of 3, 4, or 5, (more or less) per cent. cheaper than the market-price for the time being: and the addition, or increase, necessary to be made in the taxes, from time to time, will be only for the payment of the annuity, or interest, on the quantity of stock that shall be so, from time to time, established.

These premiums, it may be observed, will be eagerly accepted of by the stock-holders; because, the greater part of the loan (the whole of the loan indeed, and more than the whole of the loan, when the revenue becomes greater than the ordinary expenditure) being to be applied to the redemption, those who have not an immediate occasion for the redemption-money, will gain the premium thereon, by subscribing their respective proportions of it towards the loan. It may likewise be observed, that these premiums will be productive of an actual profit to the subscribers, greater than the apparent premium itself; because, the market-value of the stock must necessarily rise, in spite of the loan: whereas, in consequence of the depreciation, naturally attending the funding on stocks that do not bear a higher interest than that of the market, the actual profit so produced to the subscribers, must be less than the apparent premium, and may be less than nothing at all. I am strongly of opinion, that this

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may

may have been the case with our public loan of the present year. Exchange-Alley, London, can readily tell, whether it has or has not been so *de facto*.

The reader will be perfectly satisfied, that the market-value of the new stock must rise immediately (I mean within six months at furthest) after the conversion of the debt; because, the money appropriated to that channel of circulation, is thereby immediately increased. For example: 1000*l.* of 3 per cent. stock, brings into that channel of circulation, only 15*l.* half-yearly; whereas, by being converted into 570*l.* of 6 per cent. stock, it will immediately bring in 17*l.* 2*s.* half-yearly; which, consequently, produces an immediate appreciation in the value of the new stock.

It is unnecessary to say any thing further on the state of our public debts and finances. What has been said, sufficiently evinces,

I. That the opinion of our being in a state of unavoidable bankruptcy, is altogether erroneous; and, that the bankruptcy is, in fact, equally producible or preventible, at pleasure.

II. That, in order to produce the bankruptcy in a regular and mathematical progression, nothing further will be necessary, but to fund on stocks bearing any rate of interest, at pleasure, not higher than that of the market; and to give the premiums necessarily required for the loans, in an additional annuity (whether perpetual, determinate, or mixed, is immaterial) of a longer continuance, than the time of the advancement of the loans: because, so much of the said premium, as shall remain unpaid at the expiration of the term of the advancement of the loan, must unavoidably be an increase of debt, beyond the
I
quantity

quantity of the loan itself; and this deficiency (or part so remaining unpaid) must cause the debt, (either in annuity by itself, or in annuity and capital together, it is immaterial which, seeing the capital is not demandable) to increase in a geometrical progression, in the same manner, as a surplus or sinking fund causes the debt to decrease in a geometrical progression; and this geometrical progression will regularly exhaust the financial resources, and thereby produce the bankruptcy; admitting only, that the resources are finite.

III. That the bankruptcy is preventible, with much more real ease than it is producible; because, the taxes wherewith it shall be so produced, must fall on the public with an accumulated weight and burthen, in consequence of the increase in the rate of interest, with which such process must be attended; and the consequent depreciation of the capital-value of estates, which is inseparable therefrom: whereas, the taxes wherewith it shall be prevented, will periodically revert to the public with profit, in consequence of the decrease that will naturally be thereby produced in the rate of interest; and the consequent increase in the capital-value of estates, which goes inseparably hand in hand therewith. And,

IV. That, in order to prevent the bankruptcy, nothing further will be necessary (taking our public debts and finances as they now stand, 1783) but to establish a 6 per cent. stock, subject to a periodical tender for the redemption of the capital, equal to the annuity or interest, therefrom periodically flowing; and to offer to the present creditors, 57*l.* of such 6 per cent. stock, in exchange for 100*l.* of 3 per cent. stock; and so in proportion for the other stocks and annuities, of which

the debt is at present composed ; or, a less and less proportion of the new stock, periodically, as the value of the present stocks and annuities shall periodically depreciate ; until the debt be so converted : To raise annually, by loan, a sum equal to the quantity, by which the undermentioned aggregate* shall exceed the annual revenue for the time being : To make the new loans on a 6 per cent. stock †, by selling the stock to the subscribers,

* The aggregate of the expences of the civil, the maritime, and the military establishments, including all extraordinaries, together with twice the interest of the previous debt, and once the interest of the new loan so to be made : because, the interest of the debt, and the tender to be made for the redemption, are always to be equal ; and the interest of the new loan, is always to be raised by revenue.

I would not, however, be understood to mean, that the equation of the interest and the tender, should be carried to such a strictness, as to prevent or obstruct entailments, for the conveniency of providing for widows, or infants, or the like ; to whom a periodical tender for the redemption of the capital, would be inconvenient. The stocks might, with all reasonableness, be liable to entailments during the minority of an infant ; or even (which would be necessary in cases of ideots or lunatics) during the life of a widow, and of her child ; whether born, or in the womb, at the time of the commencement of such entailment : provided always, that the capitals so freed from a tender of redemption during the time of such entailments, should, at the expiration thereof, be subject to a tender equal to the sum total of the annuities that had so flowed therefrom, during the time of the entailment ; or, to a full tender, in case the sum total of those annuities should be greater than the capital.

† When the 6 per cent. stock shall have risen to 120 l. it will then be unnecessary to fund on so high a stock. The principle always to be kept in close view, is this ;
that

scribers, at a rate something lower than the market-price for the time being; and, to increase the taxes periodically, so far forth as shall be required for

that the greatest possible capital be put in motion, with the least possible revenue, that shall be consistent with the security of the value of the capital from depreciation. This security depends on keeping a periodical redemption for ever in view, and in action; by making it more profitable to keep the sinking fund in that line of service, than to divert it (when money shall be wanted) to any other service. In order to this, it is indispensably necessary, that the value of the stock should be more than as much (say about double as much) above par, as shall be commonly required, by way of premium, for new loans. This being the principle, when the 6 per cent. stock shall be at or about 120%. it will be best to make future loans on a 5 per cent. stock (subject always to a tender equal to the annuity) which will then be worth $111\frac{1}{5}\%$. : When the 5 per cent. stock shall be at or about 120%. it will be best to make future loans on a 4 per cent. stock, subject always to the same principles of redemption; for, when the 5 per cent. stock is worth $121\frac{2}{3}\%$. a 4 per cent. stock will be worth $110\frac{1}{3}\%$.; and a 6 per cent. stock will be worth only $120\frac{2}{3}\%$.: so likewise, when the 6 per cent. stock shall be worth $141\frac{3}{7}\%$. the 5 per cent. stock will be worth $133\frac{1}{3}\%$.; the 4 per cent. stock will then be worth $123\frac{1}{3}\%$.; and a 3 per cent. stock (subject likewise to a tender equal to the annuity) will be worth $109\frac{1}{11}\%$. When, therefore, the stocks shall have thus risen in value, it will be best to make future loans on a 3 per cent. stock. An equivalent in low stock, may likewise be given to the creditors, in exchange for high stock, whenever they may choose; and by this means a less and less revenue will be required. But the creditors must be careful never to accept of any stock, that shall be worth less than 8 or 10 per cent. above par; because, by so doing, they would lay themselves open to a depreciation of the value of the capital, (as has been hitherto the case) in consequence of a diversion of the sinking fund to other services.

for the payment of the interest or annuity on the quantity of stock, that shall be so periodically established.

By this process, the taxes will be increased gradually; in the same manner as animal bodies proceed in their advances from the womb to their maturity. The benefits and advantages attendant on the decrease of the rate of interest (which is naturally produced by this application of the taxes) will also go hand in hand with the increase of the taxes; in like manner, as the powers of gravitation and repulsion, in the planetary world, go always hand in hand: and, the wealth and prosperity of the nation will regularly and speedily recover itself, conjunctly with the decrease of the rate of interest; in like manner as a planet recovers its proper situation in the heavens, by the conjunct or compound power of gravitation and repulsion, when it shall have been carried (as by the intervention of a comet) from its orbit.

By this process, that threatening cloud, which now hangs over our financial hemisphere, pregnant with destruction, will be instantly dispersed; it will fly and vanish like a meteor: **AND IN LESS THAN SIXTEEN YEARS (barring the intervention of new calamities) THE NATION WILL BE RECOVERED TO A HIGHER DEGREE OF WEALTH AND PROSPERITY, THAN BRITAIN, IN HER GREATEST GLORY, HATH EVER HITHERTO BEHELD.**

So speedy a restoration of our national prosperity, may perhaps, on the first view, exceed the reader's faith. He will however observe, that a decrease of the rate of interest, is a mathematical consequent of the foregoing process; and, that a decrease

decrease of the rate of interest, and an increase of wealth and prosperity, are natural and inseparable companions. He will likewise observe, that the foregoing process is not founded on visionary imagination. It requires none of those imaginary public virtues, so vainly boasted of by pretending patriots, which, like *ignes fatui*, naturally mislead: it requires no delusive self-denials, to produce the public benefit; nor other imaginary degrees of public spirit, that would pretendedly prefer the good of others before the good of self. The attentive reader will, I say, observe, that the foregoing process requires none of those visionary, delusive, and vainly boasted virtues: it, in short, requires neither more nor less, than that natural *primum mobile* of human action, which alone can be relied on, the plain and simple virtue of unenvious self-love; which, by the construction and nature of the process, becomes inseparably interwoven with the mutual and equal interests of the state at large; whereby, the *self-love* and the *social* are concordantly united, and become the same. And, although I mention sixteen years, from the establishment of the foregoing process, for the prosperity of the nation to regain its former glorious height; yet, that happy restoration and recovery will not, in fact, require so long a time; unless its natural progression should be retarded by new calamities, which now may lay concealed in embryo, within the womb of Fate. There is, however, no human contrivance whatever, that can retard its natural progression, excepting only hostile force, and mistaken patriotism. And, if I am not very much mistaken, there is infinitely more real danger to be apprehended from wild schemes, and dark machinations, of restless and

ambitious men, cloaked under the specious mask of patriotism, than from all the hostile powers of the world.

I must not conclude this section, without reminding the reader, that this Essay is confined to principles, and does not extend into minute particulars. Lest, therefore, any reader should consider the practical conversion of the debt, to be a work of a more simple nature, than in reality it is; it is necessary to mention, that those readers who shall actually study the practical part, with that strictness of attention, which is indispensably necessary, will discover a little chain, within these last eighteen pages, which is purposely comprehended in a general expression, and left entirely unexplained.

If, barring only the accidental circumstance of striking on the exact link by a random shot, as one may call it, any thing should be done in the actual conversion of the debt, without a perfect discovery of, and strict attention to, the chain, to which I here allude, it will, mathematically and irremediably, produce an unnecessary loss to the public, of several millions; without a possibility of producing the smallest degree of benefit to any individual, but what would flow equally, with the avoidance of that loss.

Unless the particulars of the chain to which I here allude shall fully appear (which is not very likely, without being fairly hunted up by an elaborate investigation) the best method of making loans in the intermediate time, will be, to give the whole value of the actual loan (i. e. the value of the money to be actually furnished by the lenders) in a 3 per cent. capital, at whatever its market-price shall be; and to give the necessary *bonus*, in

an additional annuity, to continue two years, and then to cease : as also, to lay new taxes, only for the payment of the interest on the capital so to be given ; and to pay the additional annuity out of the surplus, by which the present revenue exceeds the interest of the debt.

If the remarks in the note, page 55, shall be found confirmed by the actual prices of the stocks in Exchange-Alley, there will, naturally, be good reason to hope, that the reader will venture to admit on credit, what is here mentioned for the avoidance of those irremediable evils, which must infallibly attend an intemperate or precipitate zeal for reformation.

S E C T. II.

Remarks on a Plan for raising Money by Public Loans, and redeeming the Public Debts; lately published by Dr. PRICE.

I AM induced to make the following Remarks on Dr. PRICE's Plan for raising Money by Public Loans, and redeeming the Public Debts, for two reasons ; viz.

I. Because the Doctor's plan is not only inadequate to the proposed end ; but he has likewise drawn inferences and conclusions, entirely remote and foreign from his *data*, or primary positions ; and has thereby plunged himself into a labyrinth of error : And,

II. Because some of the Doctor's principal readers, not observing that strictness of attention, which

which is indispensably necessary in the consideration of mathematical and deductive subjects, have followed the Doctor into that bewildered labyrinth, without perceiving it.

The Doctor, preparatory to the opening of his plan, points out the superior progessional power or efficacy of any given surplus revenue, or sinking fund, by being applied to the redemption of capitals bearing a high, rather than a low, rate of interest. In this position, the Doctor is most perfectly just and right*. But I am perfectly astonished at finding it inferred, that "reductions of interest, are some of the most dangerous temporary expedients;" and, that "they only postpone calamities, by accumulating them, and rendering them less possible to be avoided†."

So far is this inference from being true, that, although indeed, the higher the rate of interest on any capital shall be, the sooner the redemption of such capital will be effected, by any given surplus revenue, or sinking fund, that shall be thereto appropriated; yet, the lower the rate of interest on such capital shall be, the sooner will its redemption be effected, by appropriating thereto the same given revenue.

This position is of so simple a nature, that the reader will find no difficulty in being convinced of its mathematical truth; and he will, from hence, perceive how indispensably necessary it is, to consider

* See the beginning of the first section of this Essay.

† See the note in page 26 of Dr. Price's pamphlet. I have likewise heard some of the Doctor's readers draw the same conclusion. Nay, some of the arguments in Parliament, seem to be founded on the same hypothesis.

sider all the parts of a position, before he suffers himself to be led away with an imaginary hypothesis.

For example : If a revenue of 7 per cent. on any given capital, be appropriated to such capital, then, it is evident, that if the interest thereon be 6 per cent. the surplus or sinking fund will be only 1 per cent. But, if the interest be 5 per cent. the same revenue will give a surplus or sinking fund of 2 per cent. If the interest be 4 per cent. the surplus or sinking fund will be 3 per cent. If the interest be 3 per cent. the same revenue will give a surplus or sinking fund of 4 per cent. And the like of any other revenue, that shall be appropriated to the debt.

If, for a further instance, a revenue of six millions and three quarters a year (or rather 3,375,000*l.* a half-year) be appropriated to a debt of one hundred millions capital, bearing 6 per cent. interest, it will, in twenty years, redeem only 28,275,375*l.* of such capital: but, if the interest thereon be 5 per cent. the same revenue will, in the same time, redeem 58,977,450*l.* of such capital: if the interest thereon be 4 per cent. the same revenue will, in the same time, redeem 83,053,440*l.* of such capital: if the interest be 3 per cent. the same revenue will, in the same time, not only redeem the whole capital, but will likewise leave a nett surplus of 1,751,225*l.* in the treasury, for further services.

Hence then, reductions of interest, if properly conducted, instead of being "some of the most dangerous temporary expedients;" and instead of "accumulating calamities, and rendering them less possible to be avoided;" are, in reality, some of the most truly wise, truly salutary, and truly

truly beneficial, of all public measures: because, thereby any revenue is enabled to bring into action, and to repay, larger and larger capitals, whether for the support and improvement of commerce and industry, or for the public service and defence.

If reductions of interest are improperly conducted, they will, indeed, be productive of disadvantage, instead of benefit: but this is saying neither more nor less, than may, with equal truth, be said of every thing else, that shall be conducted improperly.

In reductions of interest, care should always be taken (in manner mentioned in the last note of the last section) that the reduction be not carried so far, as to leave the value of the capital in danger of depreciation. This is the only caution necessary to be attended to; and the impartial reader will observe, that it is to the full as much (nay more, if more be possible) the interest, and consequently the duty, of the creditors, as of Government, to be attentive to this point: because the creditors, in selling their stock, must be greater losers than any other individuals, by the depreciation.

It must be confessed, that this necessary attention was omitted in the reduction of the interest of the public debt of Great-Britain: but, as its necessity could not regularly appear, excepting only from a regular investigation of the nature and principles of the subject; and, as those principles, considered scientifically, remained unexplored: so, consequently, it would be equally ungenerous and unjust, to lay any blame either on Government, or on the creditors, as it would be, to blame our ancestors for not having conducted their

their navigation, or their other arts, on the same principles, and in the same degrees of perfection, as has been done in latter times.

Rejecting then (as every impartial man must do) all degrees of blame in the parties concerned, I agree perfectly with Dr. Price, that the vast weight of artificial debt*, under which we now labour, has been owing to the improper reduction of the rate of interest, and to the modes of borrowing that have since followed it.

But, from the time the depreciation in the value of the stocks actually took place, an avoidance of the increase of this artificial debt (without eradicating the cause from whence it flowed) would have been neither more nor less, than an avoidance of a lesser, by the substitution of a greater evil.

A depreciation in the value of the stocks, and a geometrical progression in the increase of the debt, are, in their essence, mathematically inseparable. They flow from one and the same cause, viz. from an insufficiency of revenue appropriated to the debt. This deficiency of revenue so appropriated, mathematically produces a depreciation in the value of the stocks, and a geometrical progression in the increase of the debt; in the same manner, and on the same mathematical principle, that a surplus of revenue, or sinking fund, so appropriated, produces a geometrical progression in the redemption of the debt, and an appreciation in the value of the stocks. A deficiency, and a surplus, must, necessarily and unavoidably, possess the same

* By the artificial debt, is meant the quantity, by which the nominal capital exceeds the actual value of the stock.

same mathematical properties, each as the other; save only, that the one is negative, the other affirmative: for, a deficiency is, mathematically, neither more nor less, than a negative surplus. And hence, any attempt to prevent any part or parcel of the effects, without eradicating the cause, from whence they mathematically flow, can only (like every thing else that shall be attempted to counteract the immutable laws of Nature) remove the malady something further from the eye of a superficial observer, and make it in reality worse.

This is precisely and exactly the case with Dr. Price's plan, for avoiding the geometrical increase of the nominal capital, or artificial debt, by funding on stocks bearing merely a higher interest. For, as the Doctor proposes no limited point for the tender, to which the stocks shall or shall not be subject, for their redemption; whereby alone they can have any secure capacity for rising above par; the higher stock will naturally be liable to the very same ratio of depreciation, as the lower stock; but will not have the same capacity for rising in value. And, consequently, no man, consistent with his own interest, can give for such higher stock, its full comparative value.

The reader will be sufficiently convinced of the truth of these remarks, by recurring to any of our loans, in which a higher and a lower stock were established at the same time.

In the year 1781, for example, a 3 per cent. and a 4 per cent. stock were established. The 3 per cent. stock brought 58*l.* and the 4 per cent. stock brought only 70*l.* The 3 per cent. stock is now convertible into a progression system of redemption, from 60*l.* to 63*l.* and the 4 per cent. stock,

stock, from 80*l.* to 84*l.* as was shewn in the last section; wherefore, the necessary redemptional loss on the money so received for the 3 per cent. stock, will be only from $3\frac{1}{2}\%$ to $8\frac{1}{2}\%$ per cent. whereas, the necessary redemptional loss on the money received at the same time for the 4 per cent. stock, will be, from $14\frac{2}{7}\%$ to 20 per cent*.

Dr.

* A 5 per cent. stock was proposed for a part of this loan; but the price it would then bring, immediately convinced the noble Lord [Lord North] who conducted the loan, that its establishment must have been attended with an immense additional loss to the public: and his Lordship therefore, like a real patriot and friend to the public, determined to resist the clamours that were excited in favour of the 5 per cent. stock, by the superficial calculations of imaginary patriots. From his Lordship's arguments in the course of the debate on this loan, I am inclined to believe, that in the establishment of 4 per cent. stocks (by which so much unnecessary loss to the public was incurred) his Lordship had prevailed on himself to submit, in some degree, to the erroneous opinions then propagated by superficial investigators, entirely contrary to his own sound judgment. It is impossible to do justice to the sound judgment, and real patriotism, by which that noble Lord was actuated, in his resistance to those erroneous doctrines, without observing, that, although his Lordship had not precisely satisfied himself, with respect to the particulars of a system, for throwing the debt into a regular progression of redemption, with the greatest possible advantage to all parties; yet, his Lordship clearly saw, that it would become perfectly practicable, whenever the circulation should become tranquil. His Lordship saw clearly (his argument fully manifests it) that, as the capital was not demandable by the creditors, but depended entirely on a future agreement for the terms of its redemption; a with-holding of the sinking fund from that service, until such agreement should be concluded, would naturally introduce terms
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Dr. Price is astonishingly alarmed at the increase of the nominal capital of our debt. He conceives, that the stocks may rise in value, so as to make the whole, or nearly the whole, of the vacant capacity, or artificial debt, become a loss to the public, in the redemption. This would indeed be the case, if Government should apply a sufficient sinking fund to the redemption of the debt, without previously stipulating with the creditors, the conditions, on which the redemption should be made; but it cannot happen otherwise.

The Doctor repeatedly declares, that nothing but a firm establishment of a progressional redemption of the debt, can save the nation from running further and further, towards the gulf of bankruptcy, and finally plunging into it.

In this, the Doctor is perfectly just and right. But this is, in reality, declaring, that there is not the smallest danger of the stocks rising in value, (whereby to cause an unavoidable loss in the redemption) without such establishment. It is, in short, declaring, that without such establishment, the stocks must go on depreciating, till at length they must fall to nought.

This being truly the case (and truly the case it really is) the danger of sustaining loss on account of the artificial debt, consists solely in the danger
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of redemption, to be agreed on in time of peace and tranquillity, infinitely more fair and equitable, than any terms that could (as things then stood) be fixed on, by the establishment of stocks bearing a higher interest, in the intermediate time. Is it not astonishing to find this argument represented to the public, as being fallacious and mischievous?

of running into erroneous schemes for its redemption. For, seeing the capital is not demandable, the creditors, for their own advantage sake, will gladly accept of equitable terms, for throwing it into a progression system of redemption; because, thereby alone can their loss by further depreciation be avoided, or their gain by a future appreciation be hoped for.

But the plan proposed by Dr. Price, for the conversion of our debt, is totally inadequate to this desirable end.

The Doctor proposes a conversion of our 3 per cent. stocks into 4 per cent. stocks, and to conduct future loans on a plan, that shall make them the means of effecting this conversion; by establishing 4 per cent. stocks, and receiving only a part of their value in money, and the remainder in a transcription of 3 per cent. stock.

There is no doubt, as to the practicability of effecting this conversion, as things now are, by giving a premium for it: but it could not be effected without giving a premium, for the reasons already mentioned; viz. the 4 per cent. stock would be liable to the same ratio of depreciation, as the 3 per cent. stock; but would not have the same capacity for rising in value: and, consequently, no man, consistent with his own interest, could give the full comparative value for such 4 per cent. stock.

But what should we be the better, by this conversion? Dr. Price conceives, that we should be the better, purely because the nominal capital would be lessened; whereas, in truth, the only real effect that would be thereby produced, would be this: The creditors would have a momentary, and only a momentary, gain, by the premium so

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given for the conversion; and the public would forever lose it, without being able to obtain thereby, the smallest degree of advantage whatsoever.

I have shewn, in the foregoing section, that even a 5 per cent. stock would be ineffectual, in the present state of our finances; unless our taxes were to be increased by such hasty strides, as would be at best imprudent, if not dangerous. A 4 per cent. stock would be subject to the same ratio of depreciation, as a 3 per cent. stock; and would, of course, run down in the same manner.

The reader will easily be convinced of the truth of this remark, without the trouble of recurring back to the principles contained in the foregoing sections, or in my former Essay, by adverting to the following plain and obvious considerations; viz.

Our public debt, at the end of the last war, in 1763, was only about two-third parts so great as it now is; our surplus revenue was then much greater in proportion to the debt, than it can at present be made (admitting the statements lately published, to be near the truth) by the utmost rational exertions; our 3 per cent. stocks were likewise much higher then, than our 4 per cents now are: notwithstanding all which, the stocks fell down, even during the peace, from the point to which they flew up at the discontinuance of the war, in spite of the sinking fund that was applied to their redemption. Our debt being now so much greater than it then was; our revenue proportionately so much less; our 4 per cent. stocks being likewise much lower than our 3 per cents then were; and an immense out-standing debt remaining to be funded; it would be perfectly absurd,

furd, even without any further demonstration, to suppose, that our financial system should be better, or even any thing near so well, able to support 4 per cent. stocks from depreciation now, as it then was to support 3 per cents.

Dr. Price recommends likewise (as if afraid his system, in its own nature, would still be incomplete) a positive law, consigning a surplus, or sinking fund, to commissioners, in order to render its appropriation to the redemption of the debt, unalienably secure. This, the Doctor conceives, would be a measure highly salutary.

In the latter part of the foregoing third section, I examined the position, from whence such opinion must have originated; and shewed, that a positive law must be at best unnecessary, and in some cases pernicious. In our present case, were it admitted to be practicable, it would be pernicious in the extreme.

So far forth as the natural laws of profit and loss, shall render an appropriation of money to the redemption of the debt, more advantageous than any other line of service; so far, the gain alone will be a sufficient security. A positive law would indeed be harmless in this case, but it could by no means be necessary; for the gain would be the strongest of all possible securities. But, where the natural laws of profit and loss shall render the appropriation of money to any other line of service, more advantageous than the appropriation thereof to such redemption; the positive law must be pernicious.

In the examination of the above-mentioned position, in the foregoing third section, I shewed, that the appropriation of money to the redemption of stocks bearing a higher interest than that of

the market, would always be advantageous ; but, that while money should be wanted in any other line of service, an appropriation thereof to the redemption of stocks bearing a lower interest than that of the market, must be attended with loss to the public : because, (plainly and simply, without troubling the reader to recur back to the examination of the position) in that case, the money so wanted for other services, could not be obtainable in the market, without giving a greater revenue for it, than that which would be released, by applying the same sum to the redemption of the stocks.

True it is, agreeable to Dr. Price's observations, that if a surplus, or sinking fund, had been invariably applied to the redemption of the debt, from the year 1752, or 1753, while the stocks were at and above par, less than one million a year would have been sufficient, for the purpose of preventing their depreciation ; and the nominal capital of our debt would not, at this time, have been two-third parts of what it now is. But, it must be remembered, that, as the principle for giving the stocks a free and secure capacity for rising in value above par (by limiting the tender to which they should be periodically subject, for their redemption) had not then occurred ; the application of money to their redemption, would naturally have subjected the creditors to a further reduction of the interest, without affording them, as individuals, the least equivalent. This, the creditors would very naturally endeavour to avoid ; and they therefore, very naturally, threw all possible obstacles in the way of every thing that should lead to it.

Had the principle occurred, for giving the stocks a free and secure capacity for rising in value above par, by limiting the tender to which they should be periodically subject, for their redemption, the creditors would gladly have embraced the acceptance of a tender, equal to the annuity or interest; because, in that case, although they would in effect have sustained a reduction of the interest on the part so to be tendered; yet, they would always have gained just exactly double as much, by the increase in the value of the remaining capital, as they would lose by such, in effect, reduction of interest; which is the *maximum*, or greatest gain, that they could, in mathematical possibility, derive from any receipt or payment, whether greater or lesser.

But this, as I said before, not occurring, a reduction of the interest was the only thing that the creditors guarded against; and, leaving their capital unguarded, its value naturally depreciated, for want of a progressional redemption to support it: and the increase of the debt, in a geometrical progression, proceeded naturally, hand in hand, with that depreciation. This is, precisely and truly, the exact nature of the case.

From the time this depreciation in the value of the stocks took place, an appropriation of money to the redemption of the debt, while it should be wanted for any other service, must, as I said before, have been attended with loss to the public; because, the revenue necessarily required to obtain any given sum in the market, must have been greater than the revenue, that would have been released by applying the same given sum to the redemption of the debt.

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At this time, the rendering of a sinking fund unalienable, (without previously establishing the conditions of redemption, by an effectual conversion of the debt) would be attended with a most immense loss to the public. If such a scheme were really practicable, and actually to be carried into execution, it would effectually saddle the public with that very loss, which Dr. Price hath been so sedulously endeavouring to avoid: for, in that case, the stocks must be redeemed continually, at a price above their actual value, until at length they should become raised, from their present price, to par.

There is nothing but the power of alienating or with-holding the sinking fund, that can, in nature, command a conversion of the debt; nor is there any thing in nature, but an effectual conversion of the debt, that can obtain for the public, equitable terms for its redemption.

But this power of alienating or with-holding the sinking fund, will always naturally command the acquiescence of the creditors, in the necessary conversion of the debt, on terms that shall be perfectly equitable: because, the creditors must either accept of the terms, when offered; or else, by alienating the sinking fund, and keeping the revenue something less than the expenditure, they must sustain further and further loss, by the consequent depreciation of the value of the stocks, until they do actually accede to the necessary conversion; be it sooner, or be it later. Any hesitation or delay on the part of the creditors, must unavoidably make their loss greater and greater, until they shall become disposed to accept of equitable terms: and those equitable terms will
likewise

likewise become less and less, from period to period, until accepted.

Immediately after the conversion of the debt, the stocks will rise, as was shewn in the last section; and the creditors, of course, will thereby regain gradually, the loss that shall have been sustained by their depreciation.

This being truly the case, there is no danger of an hesitation on the part of the creditors, after they shall have considered the matter seriously. I am much mistaken, if the creditors would hesitate a single half-hour, at accepting of the terms mentioned in the foregoing section. I am fully persuaded, that they will be glad to accept of lower terms, before Midsummer in 1784; and still lower, before Midsummer in 1785.

But, should they even hesitate ever so long, there will be no danger, either of a public bankruptcy, on the one hand, nor of their finally complying, on the other; while the revenue shall be kept any where between the interest of the debt, and the whole amount of the expenditure. Even, were the 3 per cents to run down to 45 $\frac{1}{2}$ l. (and that they must do, long and long before there can be any real danger of a public bankruptcy, from any other cause but insurrection, and force of arms) a conversion of the debt into an 8 per cent. annuity stock, subject to a periodical tender for the redemption of the capital, equal to the annuity therefrom periodically flowing (which would then be worth $109\frac{1}{11}$ l. so that 100l. of 3 per cent. stock, would then be worth $41\frac{1}{4}$ l. of such 8 per cent. stock), would even then, as is evident from the foregoing sections, establish the necessary progressions; and would thereby effectually defeat the bankruptcy, and restore the public

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lic credit to its pristine state, with a mutual and equal advantage to all, and without the smallest mixture of future disadvantage or burthen, to any.

I have, I believe, pointed out to the satisfaction of every attentive reader, a sufficiency of the errors with which Dr. Price's Observations on the Principles of Public Credit are through and through, from root to branch, pervaded. The Doctor intimates it to his readers as his then opinion, that, if he could serve the public in any thing, it was, in projecting that erroneous system of finance, which has been the subject of these remarks. Should he continue to possess the same opinion, there is reason to hope, that he will, in future, consider his positions more maturely; and not suffer the warmth of his zeal for reformation, however laudable the intention may be, to hurry him, in future, into such visionary schemes, and hypothetic systems. I am the more ready to hope, that this may be the case, because I am confidently of opinion, that if he should re-examine his Observations on the Principles of Government, with that attention and strictness, which the principles of every thing indispensably require; he will not find them less erroneous, than his Observations on the Principles of Public Credit.

If in any instances in the course of these remarks, I should have departed from that civility of expression, which might be wished; I shall not fail (on their being pointed out) to have them corrected, in any future edition that may be called for: In the mean time, the reader will, I hope, make candid allowances for them, on recollecting that they are expressions of a member of those unfortunates, that are plunged into labyrinths of calamity

calamity and distress, easier to be conceived than described, by the erroneous schemes that have been pursued for imaginary reformatations, on the western side of the Atlantic. The projectors might perhaps have set out, equally with Dr. Price, free from any real intention of producing injury. It may with the utmost safety be presumed, that they intended, at the least, to have avoided all possible evils, but what were, in their nature, inseparable from a state of warfare. But, in the hurry of their zeal for reformation, they took up an hypothesis without examining it maturely; and the consequent calamities would, as they indeed always must, unavoidably follow.

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THE Writer of the foregoing Essay, being unable to be in England, so soon as he would wish its publication to be effected, begs that Gentlemen, who may be pleased to favour him with remarks or observations thereon, will be pleased to communicate them, free of postage, to Mr. BENJAMIN WHITE, Bookseller, in Fleet-Street, London, as soon as possible.

St. Augustine, March 31, 1784.

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learn as he went with his information to be
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tinuations of the *Register* to be
continued in the *Register* in the
same manner as before.

ST. JOHN'S, N.B., 1844.